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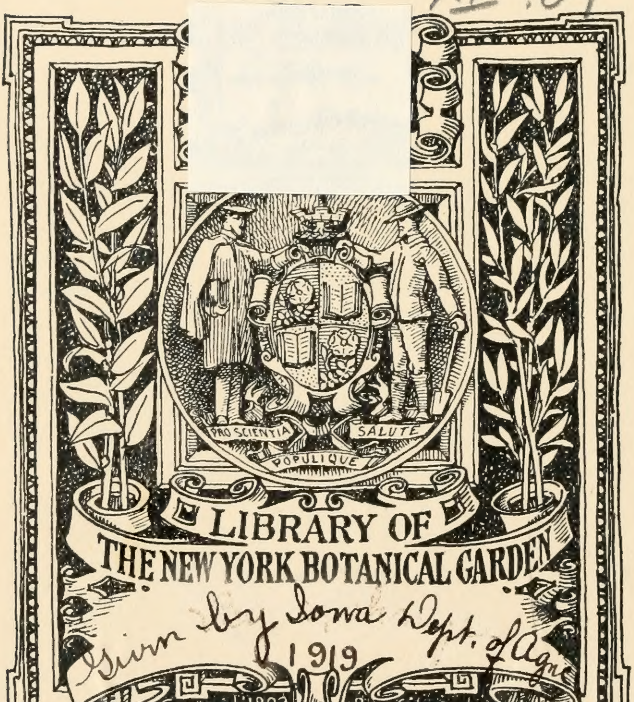

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EIGHTEENTH ANNUAL

IOWA YEAR BOOK OF AGRICULTURE

ISSUED BY THE

IOWA DEPARTMENT OF AGRICULTURE

1917

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THE STATE OF IOWA
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LETTER OF TRANSMITTAL

OFFICE OF IOWA STATE DEPARTMENT OF AGRICULTURE.

Des Moines, Iowa, July 1, 1918.

To His Excellency, W. L. Harding, Governor of Iowa:

Sir: I have the honor to transmit herewith the Eighteenth Annual Iowa Year Book of Agriculture for the year 1917.

ARTHUR R. COREY.
Secretary State Board of Agriculture.

INTRODUCTORY

Volume Eighteen of the Iowa Year Book of Agriculture is hereby submitted.

The year 1917 was one of most unusual and extraordinary conditions. Early in the year the United States declared war against Germany and immediately set about the stupendous task of getting ready for actual warfare. A survey of the food stocks disclosed a very disquieting state of affairs for a nation about to embark in war. Full granaries were few and far between. Storage depots as a rule were either empty or held sadly depleted stocks. It became plain the nation's food supply was considerably below normal, due, of course, to the unwonted demands from the fighting nations across the Atlantic.

Coincident with the work of raising a great army for immediate service a movement was started designed to increase and conserve the production of food stuffs. As a great agricultural and stock-growing state Iowa's duty was plain and imperative. The farmers promptly accepted the responsibility and sought by every means at hand to produce a surplus of all kinds of crops.

There was a general awakening and wide-spread enthusiasm in all things pertaining to food production and food conservation. Silo building was everywhere in evidence, more so than for years. The home-canning industry took on all the aspects of a boom. The growing scarcity of labor due to enlistments, the draft and the demand for workers for the various war activities was counter-balanced by mechanical power and labor-saving machinery. There was a marked growth of interest in farm tractors and the demand far exceeded the supply. The work of installing county agents went forward with such a rush that by corn-planting time every county in the state had been supplied.

Winter wheat and clover having been largely killed by inclement weather conditions the previous winter a much larger acreage than usual was devoted to corn and oats. The crop-growing season was

JAN 21 1919

disappointing. Spring was late and cold; the summer short, ending with unseasonable frost that damaged the corn over a large part of the state. The wheat harvest was a slender one. Potatoes about three-fourths of what might be considered Iowa's normal crop. The oats crop was satisfactory both as to yield and quality, while the corn crop approximated 400,000,000 bushels, much of it too soft for cribbing but put to such good use by feeders that in the end loss from that source was much less than had been anticipated.

The year closed with Iowa people prosperous, enthusiastic in their support of all war measures and activities, and with all other aims and ambitions subordinate to the duty of the hour, to support the government and do everything possible to bring the war to a speedy and successful termination in favor of the Allies.

STATE BOARD OF AGRICULTURE
1918

EX OFFICIO MEMBERS

Governor of State	Des Moines
President Iowa State College	Ames
State Dairy Commissioner	Des Moines
State Veterinarian	Des Moines

OFFICERS

C. E. Cameron, *President*	Alta
O. A. Olson, *Vice President*	Forest City
A. R. Corey, *Secretary*	Des Moines
W. W. Morrow, *Treasurer*	Afton

DISTRICT MEMBERS

First District—H. O. Weaver	Wapello
Second District—E. T. Davis	Iowa City
Third District—Elmer M. Reeves	Waverly
Fourth District—E. J. Curtin	Decorah
Fifth District—Cyrus A. Tow	Norway
Sixth District—T. C. Legoe	What Cheer
Seventh District—Chas. F. Curtiss	Ames
Eighth District—Franh E. Sheldon	Mount Ayr
Ninth District—Chas. Escher, Jr.	Botna
Tenth District—John P. Mullen	Fonda
Eleventh District—H. L. Pike	Whiting

The President, Vice President, Secretary and Treasurer are elected for one year.

Terms of directors from even-numbered districts expire the second Wednesday in December, 1918. Terms of directors from odd-numbered districts expire the second Wednesday in December, 1919.

STANDING COMMITTEES

EXECUTIVE

C. E. Cameron
O. A. Olson
A. R. Corey

AUDITING

J. P. Mullen
F. E. Sheldon
E. M. Reeves

RESOLUTIONS

E. J. Curtin
C. H. Tribby
F. E. Sheldon

POWERS AND DUTIES OF BOARD

C. E. Cameron
O. A. Olson
A. R. Corey
E. M. Reeves
C. F. Curtiss

ADULTERATION OF FOODS, SEEDS AND OTHER PRODUCTS

R. A. Pearson
Cyrus A. Tow
W. B. Barney

NOXIOUS WEEDS, FUNGOUS DISEASE IN GRAINS, GRASSES, ETC.

E. M. Reeves
Chas. Escher, Jr.
E. T. Davis

DAIRYING AND DAIRY PRODUCTS

W. B. Barney
C. F. Curtis
Chas. Escher, Jr.

ANIMAL HUSBANDRY

C. F. Curtiss
H. L. Pike
J. I. Gibson

LEGISLATIVE

C. E. Cameron
O. A. Olson
A. R. Corey
J. P. Mullen
E. J. Curtin

REVISION OF PREMIUM LIST, RULES AND REGULATIONS

C. E. Cameron
O. A. Olson
A. R. Corey
T. C. Legoe
C. F. Curtiss
H. L. Pike

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IOWA'S SOURCE OF WEALTH

IOWA'S SOURCE OF WEALTH FOR THE YEAR ENDING DECEMBER 31, 1917.

Compiled for the Iowa Year Book of Agriculture from Estimates Furnished by the Iowa Weather and Crop Service, Showing Acreage, Average Yield and Total Yield of Farm Products.

	Acres	Average Yield	Average Price	Total Yield	Total Value
Corn	10,242,000	40 Bu.	$ .97	409,667,000	$397,376,990
Oats	5,238,500	46 "	.61	239,416,200	146,043,882
Spring Wheat	173,460	18 "	1.94	3,199,820	6,207,652
Winter Wheat	133,930	18 "	1.97	2,397,560	4,723,193
Barley	258,775	35 "	1.15	9,111,590	10,478,328
Rye	35,275	20 "	1.58	722,410	1,141,408
Flax seed	7,430	11 "	2.87	80,810	231,925
Timothy seed	290,243	4.5 "	3.37	1,306,093	4,401,533
Clover seed	61,560	1.5 "	14.00	92,340	1,292,760
Potatoes	99,610	109 "	1.32	10,793,600	14,247,552
Hay (tame)	2,671,100	1.3 tons	18.82	3,584,400	67,458,408
Hay (wild)	524,912	1.2 tons	14.79	636,947	9,420,446
Alfalfa	103,215	3.4 tons	23.40	353,830	8,279,622
Pasture and grazing				Estimated	100,000,000
Ensilage				"	16,686,000
Sweet corn				"	5,800,000
Pop corn				"	900,000
Buckwheat				"	370,000
Fruit crop				"	7,000,000
Garden truck				"	8,000,000
Miscellaneous				"	12,000,000
Total value					$822,059,699

Dairy Products	$100,000,000
Poultry and Eggs	60,000,000
Wool	1,250,000
Total Value of All Farm Products	$983,309,699

NUMBER, AVERAGE VALUE AND TOTAL VALUE OF LIVESTOCK DECEMBER 31, 1917.

Figures taken from estimates made by the United States Department of Agriculture.

	Number	Average Value	Total Value
Horses	1,583,000	$104.00	$164,632,000
Mules	69,000	116.00	8,004,000
Milch Cows	1,405,000	76.70	107,763,500
Other Cattle	2,919,000	47.90	139,820,100
Swine	10,307,000	24.20	250,954,000
Sheep	1,224,000	13.80	16,891,200
Total value of Livestock			$ 688,064,800
Total value of Farm Products and Live Stock			$1,571,374,499

PART I

Synopsis of Proceedings of Iowa State Board of Agriculture and Executive and Special Committee Meetings, from December 14, 1916 to December 13, 1917

EXECUTIVE COMMITTEE MEETING.

Jan. 8-12, 1917.

Members present, Cameron, Olson and Corey.

The committee appointed the following superintendents of departments for the 1917 fair.

Admissions	N. W. McBeath, Whiting,
Concessions and Privileges	A. R. Corey, Des Moines
Grounds	J. H. Deemer, Des Moines
Live Stock Sanitation	J. I. Gibson, Des Moines
Horses, Ponies, Mules	Chas. F. Curtiss, Ames
Speed	E. J. Curtin, Decorah
Cattle	H. L. Pike, Whiting
Swine	Cyrus A. Tow, Norway
Sheep	Chas. Escher, Jr., Botna
Poultry	C. H. Tribby, Mt. Pleasant
Implements and Machinery	J. P. Mullen, Fonda
Agriculture	F. E. Sheldon, Mt. Ayr
Pantry Stores and Apiary	F. E. Sheldon, Mt. Ayr.
Dairy	W. B. Barney, Des Moines
Horticulture	E. M. Reeves, Waverly
Floriculture	Wesley Greene, Des Moines
Exposition Building, Textile, China, etc	T. C. Legoe, What Cheer
Educational	E. C. Bishop, Ames
Boys' Camp	Fred M. Hansen, Ames
Boys' Judging Contest	E. F. Ferrin, Ames
Publicity and Advertising	Ivanhoe Whitted, Des Moines

The secretary presented material for a bulletin setting forth information relative to the fair and the committee approved having the same printed as advance sheets of the Year Book.

The Domestic Engineering Company, Dayton, Ohio, made application for a location on which to erect a temporary building in which to exhibit their farm lighting system. This application was presented to the committee and they granted the request but directed the secretary to make only a yearly contract for the space.

The committee authorized Messrs. Cameron, Curtin and Corey to attend the meeting of the Iowa, Nebraska and South Dakota Racing Circuit at Omaha, Nebraska on January 22.

The request of the Holbert Horse Importing Company to recognize foreign certificates of pedigree by the Iowa Stallion Registration Division was not granted.

The claim of Mr. Coen for loss of suitcase and clothing during the 1916 state fair was not allowed.

The president announced the appointment of the following standing committees:

Executive—C. E. Cameron, O. A. Olson, A. R. Corey.

Auditing—J. P. Mullen, F. E. Sheldon, E. M. Reeves.

Resolutions—E. J. Curtin, C. H. Tribby, F. E. Sheldon.

Powers and Duties of Board—C. E. Cameron, O. A. Olson, A. R. Corey, E. M. Reeves, C. F. Curtiss.

Adulteration of Foods, Seeds and Other Products—R. A. Pearson, Cyrus A. Tow, W. B. Barney.

Noxious Weeds, Fungous Disease in Grains, Grasses, Plants, etc.—E. M. Reeves, Chas. Escher, Jr., E. T. Davis.

Dairying and Dairy Products—W. B. Barney, C. F. Curtiss, Chas. Escher, Jr.

Animal Husbandry—C. F. Curtiss, H. L. Pike, J. I. Gibson.

Legislative—C. E. Cameron, O. A. Olson, A. R. Corey, J. P. Mullen, E. J. Curtin.

Revision of Premium List, Rules and Regulations—C. E. Cameron, O. A. Olson, A. R. Corey, T. C. Legoe, C. F. Curtiss, H. L. Pike.

The secretary was instructed to secure an estimate on the cost of construction of the proposed cattle barn.

The secretary was directed to communicate with the managers of the Middle West fairs and arrange for a meeting of these fairs at the Auditorium Hotel, Chicago, February 19-22 inclusive, for the purpose of attending the meeting of the I. M. C. A. Feb. 19, American Trotting Association, Feb. 20 and the meeting to consider music and attractions on the 21st and 22nd for the 1917 fairs.

EXECUTIVE COMMITTEE MEETING.

Jan. 31, Feb. 1-2, 1917

Members present, Cameron, Olson and Corey.

The committee drew the following bill, which was introduced by Coburn in the Senate and Roberts in the House.

A BILL for an act to provide for the construction of a cattle barn on the Iowa State Fair Grounds and purchasing additional land for fair ground purposes, and to make appropriations therefor.

Be it Enacted by the General Assembly of the State of Iowa:

Section 1. That there is hereby appropriated to the Iowa Department of Agriculture, out of any money in the state treasury not otherwise appropriated, the sum of $102,500, for the following purposes.

For constructing cattle barn on Iowa State Fair Grounds............	$90,000;
For purchasing additional land and lots for State Fair Ground purposes.	12,500.

Sec. 2. All moneys appropriated by this act shall be drawn from the state treasury upon warrants issued by the state auditor upon the order of the State Board of Agriculture, signed by the president and secretary.

Sec. 3. This act, being deemed of immediate importance, shall take effect and be in force from and after its publication in the Des Moines Register and Des Moines Capital, newspapers published in Des Moines, Iowa.

The proposition of the Iowa Beef Producers' Association to offer $200 in prizes in the baby beef class, with the condition that the fair management offer an equal amount was accepted by the committee.

President Cameron issued a call for a board meeting on February 15 and 16 and instructed the secretary to notify the members to that effect.

The secretary was instructed to notify the officers representing the following associations to appear before the board at 10 o'clock a. m. Thursday, February 15, for a conference relative to catalog house exhibits at the state fair.

Iowa Implement Dealers' Association.
Iowa Retail Merchants' Association.
Iowa Hardware Dealers' Association.
Des Moines Chamber of Commerce.

The committee approved payment of bills.

MEETING STATE BOARD OF AGRICULTURE.

February 15.

The board met at 10:30 a. m. with President Cameron in the chair, and the following members of the board responded to roll call: Pearson, Cameron, Olson, Corey, Tribby, Davis, Reeves, Curtin, Curtiss, Mullen and Pike.

CONFERENCE WITH RETAIL DEALERS ON MAIL ORDER HOUSE EXHIBITS.

The following representatives conferred with the board relative to allowing Sears Roebuck & Company and other catalog houses to exhibit at the Iowa State Fair.

Mr. Jno. Cunningham, Sec'y Iowa State Merchants' Ass'n, Dubuque.
Mr. B. F. Wherry, Sec'y Iowa Implement Dealers' Ass'n, Hampton.
Mr. Robt. Shanahan, Sec'y Retail Merchants' Ass'n, Ottumwa.
Mr. F. M. Nebe, State Retail Shoe Ass'n, Atlantic.
Mr. Roy E. Stevens, Retail Shoe Dealers' Ass'n and Commercial Club, Ottumwa.
Mr. J. H. Shaffer, National Grocers' Ass'n, Davenport.
Mr. N. J. Pilkington, Editor, Merchants' Trade Journal, Des Moines.
Mr. A. M. Brackett, Sec'y U. C. T., Des Moines.
Mr. A. Clemens, Pres. Des Moines Chamber of Commerce.
Mr. R. H. Faxon, Sec'y Des Moines Chamber of Commerce.
Mr. L. B. Kirkpatrick, Pres. Des Moines Retail Merchants' Ass'n, Des Moines.
Mr. C. W. Judd, Sec'y Des Moines Retail Merchants' Ass'n.
Dean Schooler, Pres. Des Moines Auto Dealers' Ass'n.
Mr. J. K. Elwell, State Retail Merchants' Bureau, Des Moines.

Mr. Lomas, Iowa Retail Hdw. Ass'n, Cresco, Iowa.

Mr. C. A. Behrens, Sec'y Retail Grocers' Ass'n, Davenport.

After hearing these representatives the board adjourned on motion to meet at 1:30 p. m.

President Cameron called the meeting to order in the afternoon and the following members answered to roll call: Cameron, Olson, Corey, Morrow, Pearson, Tribby, Davis, Reeves, Curtin, Curtiss, Escher, Mullen and Pike.

The minutes of the board and executive committee meetings from December 14 to February 2 were read and approved.

The matter of resurfacing the race track was discussed by the board.

Mr. Curtin moved that the executive committee be instructed to take up the matter of resoiling the track early in the spring and to complete it as soon as possible so that it would not interfere with the horsemen using the track. It was suggested that soil similar to that used on the Lexington and Springfield tracks be used if possible. Mr. Reeves seconded the motion. Motion prevailed.

REVISION OF THE 1917 PREMIUM LIST.

The board proceeded to the revision of the premium list.

Mr. Escher, superintendent of the Sheep Department made the following recommendations: Add a fifth prize to the Hampshire classification, calling for an increase of $32, add a fifth prize in the Southdown classification, calling for an increase of $32 and add classification for Corriedale sheep amounting to $166. Mr. Escher moved the recommendations be adopted. Motion seconded and carried.

Mr. Tribby, superintendent of the poultry department made the following recommendations: Change Cornish Indian to Dark Cornish and put in English class with full premiums; also put White Cornish in English class with smaller premiums; offer flock prizes in American class for Rocks, Wyandottes and Rhode Island Reds, with prizes as follows: $8, $6, $4. Change the date for computing age of cockerels and pullets to Jan. 1. Begin judging in the Poultry department on Friday morning.

On motion the recommendations made by Mr. Tribby were adopted.

Mr. Tribby also recommended that a small classification for pet stock be added to the classification this year. He also suggested that an addition be built to the Poultry Building and that the Poultry Department be supplied with a ten-foot truck for handling poultry coops.

Dean Curtiss, superintendent of the horse department, submitted a revised classification for the Horse Department calling for the following increases and decreases:

Add senior and junior championships for stallions and mares in all draft horse classes, offering champion and reserve champion ribbons only.

	Increase	Decrease
Percheron division	$ 70	
Clydesdale division	70	
Shire division	87	
Belgian division	87	
Saddle horse classes	180	
Mule class	30	
Belgian futurity class	100	
Tandem class		$120
Hunter and High Jumping class		115
Morgan class		105
Shetland ponies		3
Standard Bred class		81
Total	$624	$424

Mr. Curtiss moved the revision of the classification for the horse department be approved. Motion seconded and carried.

The matter of putting on a spring stallion and bull show and sale was discussed at some length by the board.

Dean Curtiss moved the Department of Agriculture hold a show and sale for stallions and bulls in February 1918; that the dates be announced in the near future; that a sale committee be appointed and that the show be advertised in the regular premium list, official catalog and other mediums of the department. Seconded by Pike. Motion carried.

On motion the board adjourned to meet at ten a. m., February 16.

BOARD MEETING, FEBRUARY 16.

The board convened at ten a. m. with the following members present: Cameron, Corey, Olson, Tribby, Davis, Reeves, Curtin, Mullen and Pike.

Mr. J. H. Ramsey, manager of the Economy Coal Company, appeared before the board relative to securing a lease for mining coal under the state fair grounds.

Mr. Curtin moved that the executive committee be authorized to take this matter up with the governor and the board of control and if they deem it advisable have the bill pending in the legislature amended so as to give the state board of agriculture authority to lease the coal rights under the state fair grounds.

The board continued with the revision of the premium list.

The secretary presented the recommendations of Superintendent Tow relative to classifications for Mule Foot and Spotted Poland China hogs.

Mr. Curtin moved that a half classification be offered for Mule Foot hogs shown at the Iowa State Fair in 1917. Seconded by Tribby. Motion carried.

Mr. Olson moved the board offer a classification of $300 for Spotted Poland China hogs, providing the Spotted Poland China Record Association would offer an equal amount. Seconded by Mullen. Motion prevailed.

The date for computing ages of swine was discussed.

Mr. Corey moved that the board adopt the recommendation of the National Swine Growers' Association and the National Swine Show, fixing dates for computing ages of swine at March 1 and September 1. Motion seconded by Pike and carried.

The secretary presented the recommendations of the exhibitors for changes in the agricultural department, which were as follows: Add to class 91, commercial sugar beets—$3-$2-$1; add to class 93, best three heads cabbage, round, any variety—$3-$2-$1; change division 1602 to read as follows: best tray, any meritorious variety not listed above, limited to ten varieties—$2-$1-$.50. Have conditions for sweepstakes in potato division read "best tray potatoes any variety, competition for sweepstakes limited to first prize winners in preceding sections—$8.

Mr. Reeves moved the changes in the agricultural classification as outlined by the secretary be approved. Seconded by Tribby. Motion carried.

The matter of limiting the amount of money to be offered for county exhibits was considered.

Mr. Mullen moved the board limit the amount offered for county exhibits to $2,550. Seconded by Mr. Olson. Motion carried.

The secretary presented the revision of the Floricultural Department, calling for an increase of $33, as recommended by Mr. Greene, superintendent of the department.

Mr. Tribby moved the recommendations of Mr. Greene be approved. Seconded by Curtin. Motion carried.

The recommendations of the superintendent of the Machinery department were next considered.

Mr. Mullen moved the executive committee be instructed to build a brick or other permanent sidewalk from the street car station to the south entrance of Machinery Hall and that the price of floor space in the auto show room be reduced from 12½ cents to 10 cents per square foot. Seconded by Curtin. Motion carried.

The recommendations of the superintendent of the speed department were next considered.

Mr. Mullen moved the recommendations of the superintendent be adopted and that two stakes of $3,000 each be offered. The matter of fixing the entry fee and determining the classes for which these stakes should be offered to be left to the superintendent of the speed department and the executive committee. Seconded by Olson. Carried.

Mr. Reeves recommended $20 be added to classes No. 117- 118-119-120 and that $28 be added to class 121; also that $150 be offered as sweepstakes prize.

Mr. Reeves moved the classification as recommended be adopted. Seconded by Tribby. Motion carried.

Mr. Pike brought to the attention of the board the propositions from the Shorthorn and Hereford Associations, calling for an increase of $500 in the Shorthorn division and $800 in the Hereford division. The Hereford Association offered to contribute $1,500 in special money on a basis of $1 from their association for every $2 offered by the fair management. The Shorthorn Association offered to contribute $1,000 for cattle in open competition, on a basis of $1 of association money for every $2 offered by the fair management, and in addition to this guarantee the National Shorthorn Breeders' Futurity to be worth $1,000, counting the $250 added by the fair management.

Mr. Pike moved $500 be added to the Shorthorn classification to comply with their conditions and that we make the Hereford Association a proposition to add $500 providing that association offer $1,500 special money the same as last year. Seconded by Olson. Motion carried.

ADVERTISING BUDGET FOR 1917 FAIR.

Secretary Corey presented the advertising budget for the 1917 fair, calling for an appropriation of $15,500, an increase of about $1,200 over the budget of 1916.

Mr. Curtin moved the advertising budget as outlined by the secretary be approved. Seconded by Mullen. Motion carried.

THE FOLLOWING IS A SUMMARY OF APPROPRIATIONS MADE FOR THE 1917 PREMIUM LIST.

	1916	1917	Increase	Decrease
Horses	$15,583.00	$15,783.00	$ 200.00	$
Cattle	13,655.00	14,736.00	1,081.00	
Swine	4,295.00	5,087.00	792.00	
Sheep	3,996.00	4,242.00	246.00	
Poultry	2,253.00	2,349.00	96.00	
Agriculture	7,095.00	7,522.00	427.00	
Pantry & Kitchen	1,235.50	1,235.50		
Dairy Department	697.00	697.00		
Horticulture	2,117.50	2,407.50	290.00	
Floriculture	1,608.00	1,641.00	33.00	
Textile, China, etc.	1,323.00	1,341.50	18.50	
Graphic & Plastic Arts	662.00	662.00		
Educational Department	1,404.00	1,454.00	50.00	
Baby Health Department	300.00	300.00		
Boys' Judging Contest	600.00	600.00		
State Spelling Contest	100.00	100.00		
Speed Department	14,250.00	18,150.00	39.00	
	$71,174.00	$78,307.50	$ 7,133.50	

President Cameron appointed the following committee on per diem and mileage: Pike, Davis and Mullen.

The board re-convened at two p. m. with members present as at the morning session.

The committee on per diem and mileage made the following report and on motion of Mr. Curtin, seconded by Mr. Tribby the report was adopted and the secretary was instructed to draw warrants for the respective amounts:

Mr. President: Your committee on per diem and mileage beg to report as follows:

Name	Days	Rate	Amount	Miles	Amount	Total
14036—C. E. Cameron	5	$4.00	$20.00	140	$14.00	$34.00
14037—O. A. Olson	5	4.00	20.00	155	15.50	35.50
14038—C. H. Tribby	4	4.00	16.00	144	14.40	30.40
14039—E. T. Davis	4	4.00	16.00	121	12.10	28.10
14040—Elmer Reeves	4	4.00	16.00	126	12.60	28.60
14041—E. J. Curtin	4	4.00	16.00	195	19.50	35.50
14042—C. F. Curtiss	4	4.00	16.00	37	3.70	19.70
14043—Chas. Escher, Jr.	4	4.00	16.00	100	10.00	26.00
14044—Jno. P. Mullen	4	4.00	16.00	117	11.70	27.70
14045—H. L. Pike	4	4.00	16.00	206	20.60	36.60

Respectfully submitted,

H. L. Pike.
E. T. Davis.
J. P. Mullen.

The board adjourned to meet at the call of the President.

EXECUTIVE COMMITTEE MEETING.

February 17.

The committee met with Messrs. Cameron, Olson and Corey present; also Director Pike.

The executive committee accompanied the sub-committee on the state fair appropriation bill in the senate and house to the fair grounds for the purpose of inspecting cattle barns and to look over the land for which an appropriation was requested.

The Executive Committee approved payment of bills:

SPECIAL COMMITTEE MEETING. AUDITORIUM HOTEL, CHICAGO, ILL.

February 19-23.

The committee met with the following members present: Cameron, Olson, Corey and Curtin.

The committee attended the meeting of the International Motor Contest Association on February 19, the Great Western Circuit meeting and the annual meeting of the American Trotting Association on February 20, the spring meeting of the American Association of Fairs and Expositions, for the purpose of considering propositions for music and attractions for the 1917 fairs February 21 to 23.

The executive committee made the following contracts for attractions at the 1917 fair:

Thaviu's Band, consisting of fifty-two people, thirty-three instrumentalists, four singers, two Spanish dancers, a Russian Ballet of twelve and Mr. Thaviu as director. The consideration for eight days to be $3,700, with a provision providing in case the Russian Ballet is cancelled that $700 be deducted from the contract.

The committee also contracted with F. M. Barnes, Inc., for seven hippodrome acts for the sum of $3,800.

Committee also entered into contract with Mr. J. Alex Sloan, Chicago, to guarantee appearance of seven professional drivers and seven racing cars to participate in the auto races at the Iowa State Fair on August 24 and 31, for the sum of $2,500.

The committee also made a contract with Mr. Ralph Hankinson, Kansas City, Missouri, to guarantee the appearance of twelve professional drivers and twelve racing cars to participate in the auto races at the Iowa State Fair on August 24 and 31; also for the original auto polo team, to give daily exhibitions during the full period of the fair, August 24-31 inclusive, for the sum of $3,500.

The secretary also made the following concession contracts: C. F. Niskern, Clinton Junction, Wisconsin, merry-go-round and ferris wheel privilege south of Administration Building for $600.

Desplenter Brothers, Chicago, Illinois, exclusive novelty privilege on grounds, twelve stands for $600, and $50 additional for each novelty stand located.

Rocco Passerello, Chicago, Ill., toy balloon privilege for $150.

EXECUTIVE COMMITTEE MEETING.

March 7-8-9.

The committee met with the following members present: Cameron, Olson, Corey and member Pike.

The committee took into consideration the proposition made by Frank Howell, Cummings, Iowa, to graze 400 ewes with lambs on the state fair grounds.

The secretary brought to the attention of the committee and Mr. Pike the letter from Mr. Kinzer, secretary of the American Hereford Cattle Breeders' Association. The committee decided the maximum amount the board should offer for Hereford cattle should be $2,700 and in case the Hereford Association should not agree to offer $1,500 the same as last year that the board accept only $1,350 of the association money.

Inasmuch as the Poultry Building at the state fair grounds is cramped for room the committee did not deem it advisable to add classes for pet stock this year as had been recommended by Mr. Tribby, superintendent of the Poultry Department.

Mr. Curtin, Superintendent of Speed and the executive committee formulated the following speed program for 1917:

SPEED PROGRAM, 1917.

SATURDAY, AUGUST 25.

Two-year-old trot (early closing	$ 500
Two-year-old pace (early closing)	400
State Fair derby, 1¼ miles	500
4½ furlong dash	100

MONDAY, AUGUST 27.

2:15 pace "The Hawkeye" (early closing)	$3,000
2:25 trot	800
Free-for-all pace	1,000
1 mile dash	200
5 furlong dash	150

TUESDAY, AUG. 28.

2:15 trot "The Great Western" (early closing)	$3,000
2:18 pace	700
2:10 pace	700
2:12 trot, team race	500
6 furlong dash	150
4½ furlong dash	100

WEDNESDAY, AUG. 29.

Iowa State Fair Futurity No. 2, trotting division (estimated)	$1,200
Free-for-all pace, team race	500
2:20 trot	800
2:10 trot	1,000
1 mile dash	200
5 furlong dash	150

THURSDAY, AUGUST 30.

Iowa State Fair Futurity No. 2, pacing division (estimated)	$ 500
2:13 pace	700
2:25 pace	700
2:15 trot, under saddle	300
5 furlong dash	150
6 furlong dash	150

The committee considered the following proposition from the American Hampshire Swine Breeders' Association and agreed to accept same.

The Hampshire Association agrees to offer $409 in cash prizes and $400 in trophies, provided the State Board of Agriculture offer $800 in cash for Hampshire hogs.

Mr. E. T. Davis, director from the Second District, was appointed Superintendent of the Ticket Auditing Department for the year 1917.

The committee approved payment of bills.

EXECUTIVE COMMITTEE MEETING.

March 13-14-15-16.

The committee met with members Cameron, Olson and Corey present.

The committee appeared before the appropriation committee in the senate in the interest of Senate File 188, a bill asking for an appropriation for additional land and cattle barn at the Iowa State Fair Grounds.

The committee also appeared before the agricultural committee in the House for a hearing on House File 273 by Stone, a bill seeking to change the manner of electing members of the State Board of Agriculture.

The committee invited the following persons to act as superintendents of the various departments of the Women and Children's Building.

Art Exhibit	C. A. Cumming, Des Moines
Rural School Exhibit	J. A. Woodruff, Des Moines
Public Health Department	A. E. Kepford, Des Moines
Baby Health Department	Mrs. Edna M. Walner, Atlantic
Child Welfare Department	Mrs. A. O. Ruste, Charles City
Domestic Science	Miss Neale S. Knowles, Ames
Medical Director, B. H. C. Department	Dr. Lenna Means, Des Moines

The secretary was instructed to call a meeting of the auditing committee for the purpose of auditing all paid and unpaid bills on file, for March 21 and 22, also a meeting of a special committee on the spring stallion show and sale for the 21 and 22 of March.

The committee approved payment of bills.

SPECIAL SALE AND SHOW. COMMITTEE MEETING.

March 21.

Members present Curtiss, Cameron, Corey and Davis.

The committee met for the purpose of formulating rules, regulations and classification for the Spring Horse and Cattle Show and Sale.

EXECUTIVE COMMITTEE MEETING.

March 21-23.

Members present Cameron and Corey.

The committee drafted a bill asking for $20,000 for repairs to buildings on the state fair grounds and to pay the assessment on account of paving to be laid on East Thirteenth street. The committee conferred with members of the appropriation committee in the house with a view of having this bill brought out as a committee bill.

The secretary was instructed to invite a number of ladies at the head of the various women's clubs and similar organizations, to confer with the executive committee on April 4 for the purpose of determining what program should be carried out at the Women and Children's Building at the 1917 fair and ascertain if something might not be done to create a greater interest in the various features of the W. & C. Building.

The secretary was authorized to take up with the U. S. Department of Agriculture the proposition of putting on a sheep and wool exhibit at the Iowa State Fair this year.

The superintendent of grounds was authorized to take an option on property owned by Mr. Flint, not to exceed $600 for lots alone or $1,000 for lots and house; also to rent the plot of ground north of the race track for an aviation field. The secretary was also instructed to secure an option on the two lots south of the street car entrance owned by Mr. Sol Wolk at not to exceed $375.

AUDITING COMMITTEE MEETING.

March 21-22

The committee met with members Sheldon and Reeves present.

The committee approved payment on bills filed under expense warrants 13951 to 13083 inclusive; also audited and approved payment of all unpaid bills on file.

EXECUTIVE COMMITTEE MEETING.

April 6-7-8.

The committee met with members Cameron, Olson and Corey present.

The committee accepted the proposition of Mr. B. F. Howell, Cummings, Ia., to graze 400 ewes with lambs on the state fair grounds, management to fence all buildings and flower beds but to be to no other expense. Mr. Howell was granted the use of the auto parking for corralling the sheep, free water and to pay nothing for the grazing privilege.

The Executive Committee extended the contract with Mr. Deemer, superintendent of grounds for one year from December 10, 1916, with the same compensation and privileges enumerated in the contract on file.

The superintendent of grounds was instructed to employ a sufficient number of teams and men to resurface both turns of the race track and to proceed with this work at the earliest possible date. The superintendent was authorized to employ Mr. George Whitney to assist in resurfacing the track, compensation to be $4.50 per day. The superintendent was also authorized to pay $5 per day for men and teams for this work.

The secretary was authorized to rent sixty-five acres of ground from Mr. Joe Moyer for plowing demonstrations, the rental to be $2.50 per acre; also twelve or fifteen acres north of the race track for aviation field or plowing demonstration grounds at $5 per acre.

The conference called for the purpose of considering program and exhibits to be carried out in the Women and Children's Building was attended by Mrs. Allen O. Ruste, Charles City, President of the Mothers' Congress; Mrs. Max Meyer, Iowa City, V. P. Iowa Federation of Women's Clubs and Mrs. Richardson, Des Moines, President of Iowa Women Farmers' Club. The following suggestions were made:

That the Iowa Women Farmers' Club be given the use of the auditorium for putting on program one day of the fair; that the Child Welfare exhibit be staged in the room of the day nursery on the main floor and that the day nursery be under the supervision of Mrs. Allen O. Ruste. It was also the consensus of opinion of those present that a well-arranged program of educational moving pictures would be more desirable for the auditorium than a program of lectures.

The secretary was instructed to draw $11,200 of the appropriation made available by S. F. 188; $1,200 to reimburse the department for the purchase price of the Weaver lot and $10,000 to be paid to James H. Deemer for the 17 acres of ground southeast of the Women and Children's Building.

The committee attended the conference in the Governor's office on April 3, the purpose of which was to discuss ways and means of increasing the production of food products in the state of Iowa this year.

The committee approved payment of bills.

MEETING EXECUTIVE COMMITTEE.

April 18-19-20.

The committee met with members Cameron, Olson and Corey present.

The committee accepted the proposition from Mr. Fred Hethershaw to furnish all labor, grain, grasses and decorations for reproducing the Horn of Plenty for the sum of $1,250. The corn on the Horn of Plenty to become the property of the department at the close of the fair. This contract does not include repainting woodwork in booth should it be necessary.

BAND CONTRACTS.

The committee closed contract for Henry and his band for the period of August 24-30 inclusive; band to consist of thirty-five pieces, for the sum of $1,320.

The committee also closed contract for Fischers' Burlington Band for the period of August 24-30 inclusive, except Sunday. The band to consist of twenty-five pieces for the sum of $1,100.

The committee accepted the proposition from Unkrichs' Boys Band, Fairfield, Iowa, to play two days at the Iowa State Fair and Exposition, for $228.

The secretary was instructed to close option for the 17.3 acres of land and to pay Mr. James H. Deemer the sum of $10,000 as soon as abstract had been approved by the Attorney General.

The secretary was also instructed to purchase the two improved lots owned by Mr. Flint, at a sum not to exceed $750, Mr. Flint to have the privilege of removing house and all outbuildings.

The secretary was also instructed to purchase the two vacant lots owned by Mr. Sol Wolk, for a sum not to exceed $375.

IMPROVEMENTS CONTEMPLATED.

The committee visited the fair grounds on Wednesday and Thursday in company with Mr. Deemer, Superintendent of Grounds and they agreed upon the following improvements and repairs. Superintendent Deemer was instructed to proceed with the improvements at once.

Agricultural Building—Paint roof, including metal cornice and all exterior woodwork.

Administration Building—Paint roof, exterior woodwork and porch floors.

Brick Horse Barn—Paint roof, exterior woodwork and metal cornice.

Stock Pavilion—Paint roof, gutters and downspouts and all exterior woodwork.

Brick Cattle Barns—Paint roof, exterior woodwork, eaves troughs and down spouts.

Street Car Entrance—Paint roof and large sign on ridge; also structural steel.

Swine Judging Pavilion—Paint roof and exterior woodwork.

Post Office—Paint roof and exterior woodwork.

Camper's Headquarters—Paint roof and exterior woodwork.

Brick Dining Hall—Paint metal roof in front and exterior woodwork.

Machinery Hall—Repaint window glass and clerestory. Also all metal roof, exterior woodwork.

Grandstand—Paint all structural steel and metal cornice.

Speed Barn—Paint exterior of barns; also whitewash or use cold water paint to lighten up interior. Repair office in Smith-Hardy barn; also make needed repairs to roofs and interior of these barns.

Exposition Building—Paint exterior; also nail down battens and make necessary repairs to roof.

Iowa State College Building—Paint exterior.

Poultry Building—Paint exterior.

Women and Children's Building—Paint and sand porch columns; also oil wood floors. Place eaves troughs on high roof.

Bleachers—Paint exteriors.

Valley Junction Dining Hall—Paint exterior and roof.

Administration Building—Paint metal roof. Recoat and patch tar and gravel porch roof.

Brick Dining Halls—Put on new Barret tar and gravel roof.

Grandstand Roof—Recoat and patch tar and gravel roof.

Swine Pavilion—Recoat and patch tar and gravel roof.

The secretary was instructed to prepare specifications for new roof on the brick dining halls; also for repairing and recoating roofs on Grandstand, Swine Pavilion and porches of Administration Building and to receive bids on this work Wednesday, May 9, 1917.

The committee approved payment of bills.

EXECUTIVE COMMITTEE MEETING.

May 9-10-11-12.

The committee met with all members present. The purpose of the meeting was to open bids for repairing and laying roofs on fair grounds buildings.

The following bids were received for laying approximately 100 squares of Barrett Specification Roof on Brick Dining Halls, patching and recoating roofs on Grandstand (400 squares), Swine Pavilion (1,220 squares) and Administration Building porches (80 squares).

Backman Sheet Metal Works:

Dining Hall, new roof at $7.65 per square	$ 765.00
Grandstand, recoating at $2.10 per square	840.00
Swine Pavilion, recoating at $2.10 per square	2,562.00
Administration Building porches, recoating at $2.10 per square	168.00
	$4,335.00

National Roofing and Paint Co.:

Dining halls, new roof at $8.25 per square	$ 825.00
Grandstand, recoating 350 squares at $2.30 per square	805.00
Grandstand, new roof, 50 squares at $5.00 per square	250.00
Swine pavilion, recoating at $2.20 per square	2,684.00
Administration building porches, recoating at $2.20 per square	176.00
	$4,740.00

Barrick and Sons:

Dining halls, new roof at $8.00 per square	$ 800.00
Grandstand, recoating at $2.25 per square	900.00
Swine pavilion, recoating at $2.25 per square	2,745.00
Administration building porches, recoating at $2.20 per square	180.00
	$ 4,625.00

The secretary communicated with the Barrett Manufacturing Company of Chicago and found the Nichols Roofing Company, who were to do the work for the Backman Sheet Metal Works, had no contract for purchasing Barrett material. Therefore, the committee accepted the bid of Barrick & Son and instructed the secretary to draw up contract covering the work.

The committee instructed the secretary to have plans drawn for a new entrance at Thirtieth and Walnut streets; also plans for an addition to the Poultry Building, 42x64, at the southeast corner of the present building.

The committee authorized the secretary to contract for the Ladies' Keota Band for two days engagement, the band to consist of not less than twenty pieces and the consideration to be $230.

The secretary was directed to order the necessary amount of American Field Fence to enclose the additional ground southeast of the street car station.

The secretary was instructed to purchase an electric pumping outfit for pumping water out of the subway and to have the same installed at once.

ARRANGE FOR LIGHTS.

The committee authorized the secretary to arrange with the Des Moines Electric Company for a meter at the distributing plant and for current to supply the pump at the subway, lights in the Administration Building, Women and Children's Building and the superintendent's dwelling; also have it arranged so that current may be turned on in the horse and cattle barns at any time.

EXECUTIVE COMMITTEE MEETING.

June 7-8-9.

Members present Cameron, Olson, Corey and Director Tribby.

The committee, in company with Director Tribby and Mr. Deemer, Superintendent of Grounds, inspected the Poultry Building and decided to build an addition 48x64 feet to the southeast corner; also put in four ventilators in roof and purchase 240 individual steel wire coops and build twenty-nine additional pens for flocks.

The committee approved the purchase of the electric pump for the sum of $340. Said pump to be used in pumping water out of the subway.

The committee authorized the secretary to have Keffer and Jones, architects, prepare specifications for the Walnut street entrance and to receive bids to be opened on June 22.

The communication from Mr. E. J. Curtin relative to adding a class for 2:16 trotters for a purse of $800 to close August 6 was brought to the attention of the committee and the recommendations of Mr. Curtin were approved.

The committee authorized the secretary to contract with A. J. Phillips of Pocahontas, President of the Iowa Division of the National Association of Civil War Musicians for a seventeen-piece drum corps for the sum of $340. The engagement to be from August 24-31 inclusive. Also to contract with Mr. C. P. Graham, Des Moines, for Graham's Orchestra, consisting of six pieces for seven days at $178.

The committee also instructed the secretary to purchase from the California Track Harrow Company one Little Wonder Steel Harrow for the sum of $38.

The committee also visited the grounds in company with Professor F. D. Paine of Ames and determined upon a number of changes to be made on the interior of the College Building, and instructed the Superintendent of Grounds to proceed with same.

The committee decided to call a conference of the following ladies on June 21 to discuss matters pertaining to the program and various departments of the Women and Children's Building:

Mrs. W. L. Harding, Des Moines.
Mrs. Frank Shankland, President Ladies' Legislative League.
Mrs. Watzek, Davenport, President, Iowa Federation of Women's Clubs.
Mrs. Allen O. Ruste, Supt. Child Welfare Dept.
Dr. Lenna L. Means, Medical Director, B. H. C.
Millicent Schaar Lincoln, Supt. B. H. C.

The committee approved payment of bills.

EXECUTIVE COMMITTEE MEETING.

June 20-23.

Members present, Cameron, Olson and Corey.

The purpose of the meeting was to hold a conference with the club women of the state to formulate plans and arrange for a program to be carried out in the Auditorium of the Women and Children's Building during the Iowa State Fair. The ladies in attendance at the conference were: Mrs. Gov. W. L. Harding, Des Moines; Mrs. J. H. Watzek, President Iowa Federation of Women's Clubs, Davenport; Mrs. Frank Shankland, President Iowa Legislative Ladies' League; Dr. Lenna L. Means, Medical Director Baby Health Contest; Millicent Schaar Lincoln, Superintendent Babies' Health Contest; Mrs. Allen O. Ruste, President Mothers' Congress. The conference resulted in the appointment of Mrs. Harding as chairman, Mrs. W. H. Snider. Iowa City and Mrs. Geo. Cosson, Des Moines, as a committee to represent the various clubs that will have charge of the program in the W. & C. Bldg.

BIDS ON WALNUT STREET ENTRANCE.

The following bids were received for building an entrance at 30th and Walnut Streets:

Arthur H. Newman, Des Moines	$2,991
Getchell & Sugarman, Des Moines	1,600
N. D. Garmer & Co., Des Moines	1,575
James Maine & Sons, Des Moines	1,500
Jno. Widerberg, Des Moines	1,350
J. E. Lovejoy, Des Moines	1,100

The committee accepted the bid of J. E. Lovejoy, Des Moines.

The committee accepted the bid of Carr-Baal Company, Des Moines, to furnish screens for the south porch of the Administration Building for the sum of $65; also for screening the south porch of the Day Nursery for the sum of $135.

The Polk County Farm Improvement Association was given the use of the fair grounds Wednesday, June 27, for the purpose of holding a farmers' picnic.

The committee accepted the proposition of the Wingate Company of Des Moines for decorating all buildings for the sum of $850.

The proposition from Jos. H. Dagle, President of the Iowa Poultry Breeders' Association for space on which to erect an incubator building and a brooder building was brought to the attention of the committee and they agreed the lot might be assigned to the association for this purpose provided they would agree that an attractive educational exhibit be staged in these buildings each year.

The Superintendent of Grounds was instructed to paint the structural steel in Machinery Hall, the street car entrance and the brick horse barn.

Adam Stirling, Des Moines, was granted the use of one brick cattle barn and the carriage section of the horse barn for the purpose of putting on a Jersey cattle sale on July 25 at the usual rental of $50.

The committee approved payment of bills.

IN VACATION.

Capt. E. O. Fleur, Major W. S. Conkling, Major Guy S. Brewer, Adj. General Guy E. Logan and Lieut. Tillotson, officers of the Iowa National Guard requested that they be permitted to use Machinery Hall, Valley Junction Dining Hall and Mine Exhibit Building for quarters until the troops should be called into Federal service.

The secretary communicated with President Cameron and notified General Logan, Major Brewer and Major Conkling that they might have free use of the fair grounds and buildings referred to but with the understanding that the State Board of Agriculture should be reimbursed for any expense they were put to on account of the encampment. This to include light, water, labor and damage to buildings or equipment.

SATURDAY, JUNE 30.

The following telegram was received from Mr. A. L. Sponsler, President of the American Association of Fairs and Expositions.

Hutchinson, Kansas, June 29, 1917.

A. R. Corey,
Secretary Fair, Des Moines, Iowa.

Reliably informed Government contemplates abrogation of fairs this year. Emergency conference fair managers convenes at Washington, July third, answer.

A. L. Sponsler.

The secretary communicated with President Cameron and Vice President Olson and arrangements were made to meet with representatives of other members of the American Association of Fairs and Expositions at the Willard Hotel, Washington, D. C. Tuesday, July 3.

EXECUTIVE COMMITTEE MEETING.

July 14-17.

Members present, Cameron, Olson and Corey.

The committee called on Mr. Sheehan, member of the State Board of Control and Governor Harding and made an urgent request that the exhibit of the State institutions under the Board of Control be continued at the 1917 Iowa State Fair. The committee received assurance from the Governor and Mr. Sheehan that this matter would be taken care of.

The committee assigned the room on the first floor of the Women and Children's Building, occupied by the Child Welfare Exhibit last year, to the Iowa Chapter of the Red Cross Association.

The committee met with Professor C. L. Fitch, Ames, in charge of the experimental garden at the fair grounds. They agreed to make an excavation for a vegetable cellar and do all labor necessary provided Professor Fitch arrange to have material furnished to build the cellar.

The committee instructed the secretary to notify the publishers of Iowa weekly papers that grandstand seats would be furnished them if they would make application for same at the office of the secretary during the period of the fair.

The committee opened bids on a 125 foot steel flag pole for the center field. On account of the lowest bid being $540 all bids were rejected and the secretary was instructed to secure bids on a 100 foot steel flag pole without guys.

The secretary presented the communication from Mr. W. B. Quarton, President of the Iowa State Dairy Association; also correspondence from J. C. Cort, Professor in dairying at the Iowa State College. Inasmuch as the State Dairy Association withdrew their support for putting on the cow test association exhibit the committee authorized Professor Cort to go ahead with arrangements for this exhibit, with the understanding that the total expense should not exceed $300.

Contract was entered into with Mr. Geo. I. Mack, Des Moines, Iowa, to operate the grocery store on the fair grounds during the fair. The concession was fixed at $300 with the strict understanding that all groceries and other merchandise sold from the fair grounds store be sold for the same price charged for the same groceries and merchandise sold by Mr. Mack at his store located at 412 E. 6th Street.

The committee appropriated a sum not to exceed $350 to be used by the committee in charge of the program to be carried out in the auditorium of the Women and Children's Building during the 1917 fair. This to cover all expenses for picture machines, operator, expense of speakers, etc.

The committee appropriated $100 to be offered as prizes to counties having the largest representation in the parade on Boys' and Girls' Club Day, Wednesday, August 29.

The committee authorized the purchase of 10,000 gallons of road oil at five and two-tenths cents per gallon, f. o. b. fair grounds. The committee also authorized the superintendent of grounds to contract with the Hawkeye Road Oiling Company to apply this oil at three-fourths cents per gallon.

The committee met with George Schofield, Lincoln, Nebraska, and made him a proposition for the grandstand concession, he to pay the department 25 per cent of sales after the boys' selling commission was deducted, and the cashiers necessary to sell tickets. Permission was given to sell pop over counter and in stock pavilion only.

The committee approved payment of bills.

EXECUTIVE COMMITTEE MEETING.

July 25.

Members present, Cameron, Olson and Corey.

The purpose of the meeting was to come to an understanding with Adj. General Guy E. Logan as to when the National Guard should be removed from the buildings at the state fair grounds.

The following agreement was made:

AGREEMENT.

This agreement made and entered into this 26th day of July by and between the Iowa State Board of Agriculture, Des Moines, Iowa, party of the first part, and Adj. General Guy E Logan, Des Moines, Iowa, party of the second part.

WITNESSETH: That in and for the consideration of the use of machinery hall, auto show room under amphitheater, dining halls and other buildings now occupied by the various divisions of the Iowa National Guard, party of the second part hereby agrees that he will use the power of his office to cause the removal of all troops that are now stationed on the Iowa State Fair grounds and all troops that may be mobilized on said fair grounds in the near future, on or before the 8th day of August, 1917.

IN WITNESS WHEREOF, we have hereunto set our hands and seals the day and year first above written.

Iowa State Board of Agriculture,
A. R. Corey, Secretary,
Guy E. Logan, Adj. Gen. for State of Iowa.

The committee also met with the Board of Control and the board expressed their willingness to make a live stock and industrial exhibit again this year without expense to the management, other than that they pay railroad expense for fourteen-piece band from Davenport to Des Moines and sleeping tent for the band.

Arrangements were made with the Factory Inspection Department, State Mine Inspector's Department, Geological Survey and the Pharmacy Commission to make exhibits again this year.

Contract was let for one one hundred-foot flag pole to be erected in the centerfield of the race track for the sum of $425. This to cover all expenses except excavating for foundation and furnishing and pouring concrete.

The trades and labor assembly were given use of the fair grounds on Labor Day, September 3, for the sum of $25 to cover expense of cleaning grounds, light, etc.

The committee approved payment of bills.

EXECUTIVE COMMITTEE MEETING.

August 12-13-14.

Members present, Cameron, Olson and Corey.

The committee decided to set aside the space around the triangle east of the Administration Building for taxicab parking space.

The committee agreed to provide a 28x42 tent east of the Stock Pavilion in which to hold breeders' meetings; meetings of the Iowa Corn and Small Grain Growers' Association, etc.

The Woman's Navy League was granted the use of the west alcove in the basement of the Women and Children's Building.

The Pharmacy Commission was granted the east alcove in the Women and Children's Building in which they agreed to make an exhibit.

Lieut. Gillham, U. S. Recruiting officer for the Navy Department, was given spaces 30 and 32 in Power Hall for the purpose of making an exhibit of torpedoes, mines, etc., and also for the purpose of establishing a recruiting station.

The committee authorized the secretary to employ two Pinkerton detectives, the compensation to be $12 per day and railroad fare to and from Kansas City or Chicago. Their services to be required during the period of the fair.

The program for band concerts and daily program as outlined by the secretary was approved by the committee.

The committee checked up all work being done on the grounds with a view of having everything in readiness for the opening day of the fair.

Payment of bills was approved by the committee.

On August 9 and 11, C. F. Curtiss, Superintendent of the Horse Department and Charles Rinehart, Assistant assigned stalls in the horse department and arranged the judging program. On August 11 Mr. H. L. Pike, Superintendent of the Cattle Department, assigned the stalls and sent out notices to cattle exhibitors. On August 17 J. C. Duncan, Assistant Superintendent of the Swine Department assigned pens in that department.

MEETING STATE BOARD OF AGRICULTURE.

Friday, Aug. 31, at 8 O'clock p. m.

Board Room, Administration Bldg.

Meeting called to order with President Cameron in the chair. The following officers and members answered to roll call: Cameron, Olson, Corey, Morrow, Tribby, Davis, Reeves, Curtin, Legoe, Curtiss, Sheldon, Escher, Mullen and Pike.

The directors and superintendents presented the following payrolls for the respective departments.

Admissions Department	$2,750.00
Treasurer's Department	1,479.50
Concession Department	2,155.25
Speed Department	640.55
Horse	1,547.50
Cattle	1,172.19
Swine Department	621.50
Sheep Department	385.00
Poultry	323.49
Machinery Department	647.60
Agricultural Department	648.00
Horticultural Department	185.32

Floricultural Department	132.50
Textile, China Department	341.48
Educational Department	641.50
Ticket Auditing Department	292.25
Graphic and Plastic Arts Department	212.50
Publicity and Awards Department	110.00
Boys' Judging Contest	60.80
Propertymen	220.40
Secretary's extra help	765.50
Baby Health Department	802.50
Child Welfare and Day Nursery	216.63
Women and Children's Building Program Committee	187.32
Dairy and Ice Cream Department	1,293.91
Auto Parking Police	152.00
Campers' Headquarters	227.00

Mr. Mullen moved that the board approve the payrolls and that the secretary be instructed to draw expense warrants covering amount of each and deposit same with the Central State Bank to the credit of the superintendent's payroll account, and that the superintendents be instructed to issue payroll checks on these accounts.

Motion seconded by Mr. Olson and carried.

Mr. Mullen moved the secretary and treasurer be allowed $25 to take care of the extra expense they were put to during the fair. Motion seconded by Mr. Olson and carried.

Mr. Curtin moved that the board appropriate $3,500 to the Ammunition Train in payment for police duty during the period of the Iowa State Fair and that the secretary be instructed to issue fourteen expense warrants for $250 each in favor of Colonel Fred Holsteen, commanding officer of the Ammunition Train.

RESOLUTION OF THANKS TO SOLDIERS.

Mr. Olson moved that a committee of three be appointed to draft resolutions extending thanks of the State Board of Agriculture to the colored officers, Third Iowa Regiment, and Battery F, for putting on maneuvers, drills and reviews in front of the grandstand. Also extend thanks to the ammunition train for putting on drills and for the efficient manner in which they policed the grounds.

President Cameron appointed the following committee on resolutions: Legoe, Davis and Curtiss.

The committee on resolutions presented the following resolution, which was unanimously adopted:

RESOLVED, That the Iowa State Board of Agriculture extend a vote of thanks and express its high appreciation of the excellent service rendered by the 168th Infantry (3d Iowa Inf.) U. S. National Guard, for the Regimental Review; to the Iowa Ammunition Train for policing the grounds; to Battery "F" Field Artillery for exhibition drill, and to the Colored Officers' Training Camp for exhibition drill during the 1917 Iowa State Fair.

T. C. Legoe,
E. T. Davis,
C. F. Curtiss,
Committee.

Mr. Reeves moved the secretary be instructed to forward a copy of the resolution to each of the commanding officers in the organizations referred to in the resolution. Motion seconded and carried.

The president appointed the following committee on per diem and mileage: Sheldon, Pike and Escher.

Mr. Olson presented the claim of Grant Burnett for the refund of five campers' tickets, amounting to $2 each. On motion of Mr. Olson the claim was allowed.

The secretary read a concession from Judge Hubert Utterback, chairman of the Des Moines Chapter of the American Red Cross, in which he asked for a refund of the $75 paid by the Red Cross Association for a booth in the Stock Pavilion. Mr. Legoe moved the secretary be instructed to write Mr. Utterback and explain that while the board took the position of doing everything possible for the Red Cross Association by giving them free space in the Women and Children's Building and permitting them to sell Red Cross badges throughout the grounds, the board could not establish the precedent of giving charitable organizations free concession space. Motion seconded and carried.

The committee on per diem and mileage made the following report and moved its adoption:

Mr. President: Your committee on per diem and mileage beg to report as follows:

	Name	Days	Rate	Amount	Miles	Amount	Total
14425	C. E. Cameron....	25	$4.00	$100.00	140	$14.00	$114.00
14426	O. A. Olson........	25	4.00	100.00	155	15.00	115.50
14427	C. H. Tribby......	22	4.00	88.00	144	14.40	102.40
14428	E. T. Davis........	22	4.00	88.00	121	12.10	100.10
14429	Elmer Reeves	22	4.00	88.00	195	19.50	107.60
14430	E. J. Curtin........	22	4.00	88.00	195	19.50	107.60
14431	T. C. Legoe........	22	4.00	88.00	85	8.50	96.50
14432	C. F. Curtiss......	22	4.00	88.00	37	3.70	91.70
14433	F. E. Sheldon......	22	4.00	88.00	123	12.30	100.30
	Chas. Escher, Jr...	22	4.00	88.00	100	10.00	98.00
	Jno. P. Mullen....	22	4.00	88.00	117	11.70	99.70
	H. L. Pike.........	22	4.00	88.00	206	20.60	108.60

Respectfully submitted,

H. L. Pike,
F. E. Sheldon,
Chas. Escher, Jr.

On motion the board adjourned to meet at the call of the president.

EXECUTIVE COMMITTEE MEETING.

August 18-31.

The committee held no regular meetings during the above period but transacted such business as was brought to their attention.

The committee approved payment of the bills and contracts as they were presented.

EXECUTIVE COMMITTEE MEETING.

September 17-18.

Members present: Cameron, Olson and Corey.

The committee in company with Mr. Sargeant invoiced the feed left over at the forage barn after the fair and agreed upon prices at which it was to be taken back by Mr. Sargeant.

The bill of P. D. Newman for $13.60 on account of loss sustained on account of defective wiring at his stand on Grand Avenue was not allowed.

The letter of Louise Orwig was brought to the attention of the committee. The committee instructed the secretary that inasmuch as the delay in bringing her exhibit of painting to the fair grounds was due to a misunderstanding as to the time her exhibit was to be in place, that the secretary communicate with Professor Cumming and agree upon a settlement.

A communication from the Iowa Telephone Company relative to lowering conduit for telephone cables to the Administration Building and Machinery Hall, was brought to the attention of the committee. The committee authorized the telephone company to proceed with this work with the understanding that the expense for repairs and replacements not exceed $175.

The superintendent of grounds was instructed to finish cleaning grounds and buildings, and then discharge all help except one man to drive mule team and one man to serve as watchman.

George Whitney, Assistant Superintendent, was asked to remain until October first.

The committee approved payment of bills.

MEETING AUDITING COMMITTEE.

October 5-6.

The auditing committee met with members Sheldon and Reeves present.

The committee approved payment of all paid bills that were approved and paid by the Executive Committee since the last meeting of the auditing committee.

The committee also approved payment of all unpaid claims on file.

SPECIAL COMMITTEE MEETING.

October 12.

The committee on the Spring Stallion and Bull Show and Sale met with the following members present: Cameron, Olson, Corey, Curtiss and Davis.

The president and secretary of the Iowa Shorthorn, Hereford and Angus Associations were extended an invitation to be present at this meeting but none of the officers attended the meeting. The president and secretary of the Iowa Draft Horse Breeders' Association were also invited to attend but only the secretary, G. E. O'Brien, was present.

The sale committee did not deem it advisable to go ahead with the sale without a conference with the representatives of the above association.

The committee instructed the secretary to write the representatives, outlining the plan for conducting the sale, and ask them if they wished to co-operate with the State Board of Agriculture in putting on this spring show and sale. The secretary was further instructed that if favorable replies were received from a number of the associations that he call another meeting and extend representatives of the above associations an invitation to participate.

EXECUTIVE COMMITTEE MEETING.

October 6.

Members present, Cameron, Olson and Corey.

The committee authorized Mr. Cameron and Mr. Corey to attend the Texas State Fair, the dates for which are October 12-29 inclusive.

The committee also authorized the secretary to sell the old shed on the Wilkins land for $15.

The committee approved payment of bills.

EXECUTIVE COMMITTEE MEETING.

November 7-8.

Members present, Cameron, Olson and Corey; also director Curtiss.

The secretary brought to the attention of the committee correspondence received from the secretaries of the Iowa Breeding Associations relative to the spring show and sale. The committee decided inasmuch as the Iowa Shorthorn Breeders had already made arrangements for putting on a spring sale that the board should not attempt to put on a spring show and sale during the spring of 1918.

Program arrangements for the State Agricultural Convention were discussed by the committee. The secretary was instructed to invite the following speakers to address the convention: Hon. J. F. Deems, Burlington, Iowa, Food Administrator; Prof. W. H. Pew, Iowa State College, to discuss swine production in Iowa; Mr. Chas. Downing, Greenfield, Indiana, to discuss duties of the state and county fairs during the present crisis, and Governor W. L. Harding on some selected subject.

The committee authorized the secretary and the superintendent of grounds to employ a night watchman for the fair grounds at not to exceed $65 per month, said watchman to remain on duty all night.

The secretary submitted the following brief financial statement, which was taken off the books at the close of business November 1. A copy of this summary and comparative statement of expense of the 1916 and 1917 fairs was also sent to each member of the board.

SUMMARY OF RECEIPTS AND DISBURSEMENTS, DECEMBER 1, 1916, TO NOVEMBER 1, 1917.

Receipts:			
Cash balance December 1, 1916			$ 3,998.17
Receipts from sources other than fair			41,097.69
Receipts of fair other than ticket sales		$ 81,080.02	
Receipts from ticket sales		173,799.20	
Total receipts of fair			254,879.22
Grand total receipts			$299,975.08
Disbursements:			
Disbursements other than fair or improvements		$ 31,252.85	
Expense of fair other than premiums	$116,150.94		
Cash premiums paid	72,442.07		
Total cost of fair		$188,593.01	
Cost of permanent improvements and repairs		18,668.30	
Cost of maintenance of grounds and buildings		7,949.47	
Total disbursements			266,463.63
Balance on hand November 1, 1917			$ 33,511.45

Profit on 1917 fair, $66,286.21.

The committee approved payment of bills:

MEETING OF STATE BOARD OF AGRICULTURE.

Thursday, December 13.

The board convened at ten a. m. with President Cameron presiding. The following members responded to roll call: Cameron, Olson, Corey, Morrow, Tribby, Davis, Reeves, Curtin, Tow, Legoe, Curtiss, Sheldon, Escher and Mullen.

The secretary read the minutes of the board and executive and special committee meetings commencing with the board meeting on February 12, 1917, and concluding with the executive committee meeting on November 28. Mr. Davis made a motion that the minutes as read by the secretary be approved. Seconded by Mr. Olson and carried.

Mr. Olson moved the old board adjourn sine die. Motion carried.

Mr. B. W. Garrett, Clerk of the Supreme Court, was called and administered the oath of office to the following newly elected officers and members of the State Board of Agriculture: Cameron, Olson, Curtiss, Tow, Reeves, Weaver and Escher.

Mr. Pike returned to the board room and was taken to the office of the Clerk of Supreme Court and the oath of office was administered to him by A. V. Arney, Deputy Clerk of the Supreme Court.

The secretary called the roll and the following members responded: Cameron, Olson, Corey, Morrow, Weaver, Davis, Reeves, Curtin, Tow, Legoe, Curtiss, Sheldon, Escher, Mullen and Pike.

The board proceeded to elect a secretary and treasurer. Mr. Mullen moved that A. R. Corey be elected secretary to succeed himself at a salary of $3,500 per year as authorized by statute and fixed by the board at the last annual meeting. Motion seconded by Mr. Legoe and carried.

Mr. Reeves moved that W. W. Morrow be elected treasurer to succeed himself and that his salary be fixed as provided by statute at $100 per year and that he be required to furnish bond in the sum of $100,000. Mr. Escher seconded the motion. Motion carried.

The matter of disposing of the corn on the "Horn of Plenty" for seed was discussed by the board. Mr. Reeves moved that the secretary be directed to sell this corn at $5 per bushel and that the board members who are in need of seed corn be permitted to buy not to exceed twenty bushels at $5 per bushel and that the balance be sold through Carl N. Kennedy, Polk County Agricultural Agent at the same figure. Motion seconded by Mr. Mullen and carried.

The secretary made the following report to the board.

OFFICERS AND MEMBERS OF THE STATE BOARD OF AGRICULTURE.

Gentlemen—In regard to the financial condition of our treasury and the receipts and disbursements, there is not much I can say that is not covered in my printed report. The statement of premiums paid shows an increase of $5,381, which is correct. On the other hand the $72,442.07 paid in premiums represents the total amount paid out including the special money offered by the breeding associations. This special money amounted to $7,225 for 1917 and $5,615 in 1916, a gain of $1,610 for 1917.

There was also an increase of $3,742 in receipts of the speed department which must be taken into consideration when balancing the premium account.

The following statement shows amount paid in cash premiums and amounts received from various sources to apply on premiums for the 1916 and 1917 fairs:

	1917	1917	1916	1916
Total cash premiums paid....		$ 72,442.07		$ 67,060.41
Special premium money received:				
Assn. special money........$	7,225.79		$ 5,615.65	
Entry fees draft horse futurity	594.00		807.00	
State Fair Futurity, speed department	584.84		1,057.30	
Western Breeders' Futurity.	860.00		717.78	
Entry fees speed department	6,109.50		2,036.98	
Total received to apply on premiums		$ 15,374.13		$ 10,234.71
Net amount paid in premiums by fair management		$ 57,067.94		$ 56,825.40

From this statement it will be noticed the increase actually amounted to $242.54.

Forage cost $6,369 more than last year, but should not be considered an increase in the expense of fair for the receipts from sale of forage increased in about the same proportion.

Advertising cost $15,717.84, an increase of $1,407.84 over last year. This, however, is only $217.84 in excess of the appropriation for advertising made by the board at the spring meeting.

Music and attractions cost $21,631 or $1,295 more than last year, and $654 less than in 1915. Auto races cost $870 more on account of employing the services of two promoters who secured about half again as many cars as took part in the races at the 1916 fair. The other increases in expense of fair are small and occurred in practically all departments.

If you have had an opportunity to go over the statement of improvements and permanent repairs you will have noticed that all the tar and gravel roofs were recoated and repaired this year. Every frame building and all the woodwork and metal roofs and cornices on permanent buildings were given one or two coats of paint. The structural steel in the grandstand, street car entrance, horse barn and about half the steel in machinery hall was also painted. In fact every building on the grounds is in first class state of repair and should require but very little expense for maintenance and repair another year.

There are a few suggestions I should like to make at this time.

I do not believe it would be wise to continue the "Horn of Plenty" exhibit another year as we have already featured it for two years. I believe, however, we should provide a feature exhibit to take its place in the center of the building. Just in the way of a suggestion I have thought a pillar of fruit, vegetables and agricultural products, similar to what was put on at the New York State Fair this year, might be appropriate.

I would suggest that during this period of food conservation that all canned goods, exhibited in the pantry department, be judged by appearance. This would save the superintendent of the department a lot of grief and preserve all the exhibits.

I would also recommend that a third premium of one dollar be added to the classification for cakes. This would call for an addition of $38 to the classification. We should also add a class for the different kinds of war breads.

The boys' and girls' club work has developed wonderfully in the state during the past few years and their exhibits at the state fair have become more interesting each year. I believe the board should lend further encouragement to this work by offering prizes for pigs fed and exhibited by boys and girls.

The Chester White Breeders' Association and the Duroc Jersey Association offered $50 in special for the best pig fed and exhibited at the Iowa State Fair this year by a boy or girl under sixteen years of age. If the board would duplicate this amount and make a similar proposition to the Poland China and Hampshire Associations it should bring out a very good show.

Assuming that it is the intention of the board of keep a balance on hand until conditions become more normal I hesitate to make very many recommendations for improvements for another year. They are a few things, however, that should be done that will not call for a very great expenditure of money.

The outside fence from the Grand Avenue entrance to the northwest corner and from the northwest corner to the top of the hill should be replaced before another fair. It was down in a dozen places this year and the old fencing is beyond repair.

The camp ground roads should have attention. That is the two roads now leading into the camp should be connected at the back end of the grounds to form a continuous road. There should also be another road built leading off of Grand Avenue near campers' headquarters up past the Poultry Building into the main part of the camp grounds. There should also be another road leading off of Grand Avenue just east of the tent and awning company buildings through the north part of the grounds connecting at the back end with the main road that runs through the center of the camp grounds. There should also be a few additional toilets in the camp grounds. I believe it would also be possible to convert the large toilet east of the grocery store, the two east of the Exposition Building and the one large one in the camp grounds into semi-sanitary toilets. There are the toilets that were equipped with burners a few years ago. They have cast iron stools with wooden covers and I believe they could be equipped with automatic flushers and troughs such as the range toilets have, and would work very satisfactory or at least be an improvement on the present vault system. The sanitary sewer and water is carried to all of these toilets.

The space under the lobby of the Administration Building should be excavated and toilets for both men and women installed in this room.

There should be a permanent shade on the west end of the grandstand. The canvas shade has been unsatisfactory and expensive. The storm on

Monday during the 1914 fair riddled the canvas and we had no shade during the balance of the fair. In 1915 we bought a new canvas at an expense of $161.82. It blew off once during the fair and cost $9.25 for repairs. In 1916 the only expense was $8 for putting up the canvas. In 1917 we spent $13.80 for repairs before putting it up, it blew down on Saturday and we spent $24.85 for repairs. It blew down again Monday morning and was beyond repair. No shade from Monday on. A new canvas will cost at least $250.

The matter of improving the roads in the camp grounds, providing additional light and additional toilets was discussed at length by the board. Mr. Curtis moved the Executive Committee be authorized to take up the matter of improving the roads in the camp ground with the Executive Council and the State Highway Commission, with the view of having it done as state work. Mr. Escher seconded the motion. Motion prevailed

President Cameron called upon the various members of the board to make a report and give their recommendations for their respective departments.

Mr. Mullen, Superintendent of the Machinery Department, recommended that a cement or brick sidewalk be constructed from the street car entrance to the south entrance to Machinery Hall; also that the aisles in Machinery Hall be cemented with not less than five inches of concrete. Mr. Mullen also stated he had interviewed the auto exhibitors and that they had indicated they would prefer to stay in their present location rather than occupy space in Machinery Hall. He also expressed the hope that the room under the amphitheater used for the auto show might be enclosed in a permanent way in the near future so that it would better protect the exhibits. Mr. Mullen also presented the communication from the Shaver Carriage Company relative to purchasing their building. Mr. Mullen said there was no great demand by his department for this building but that he would recommend that it either be purchased by the board or removed from the grounds.

Mr. Legoe, Superintendent of the Exposition Building, recommended that the aisles of the Exposition Building be thoroughly cleaned and given a fresh coat of saw dust before another fair, and that the exhibition cases be leveled so that the doors will work more easily. He also recommended that permanent steps be put in leading up to the west entrance and that a wider walk be built leading from the Women and Children's Building to the south entrance; also that the classification of the fine art department be thoroughly revised, providing a class for realistic and conventional hand-painted china; also that the textile department be thoroughly revised and a class added for knitted work.

Mr. Tow, Superintendent of the Swine Department, recommended that the Spotted Poland Chinas be given a classification equal to the Yorkshires and Tamworths—$470, and that the board contribute $100 to the Chester White futurity; also that the board contribute $50 in each case where the breeding association will contribute $50 or more for pigs fed and exhibited by boys and girls under sixteen years of age.

Mr. Pike, superintendent of the cattle department indicated to the board that the classifications for all dairy breeds should be strengthened but did not deem it advisable to do so at this time on account of the lack of barns to properly house the present exhibit.

Mr. Curtin, superintendent of the speed department, presented the protest of H. M. Hemingway in which Mr. Hemingway protested as to the manner in which the money was divided in the Iowa State Fair Futurity races at the 1917 fair. Mr. Curtin stated to the board that Mr. Hemingway had received all the money he was entitled to under the rules of the Iowa State Fair Futurity and the American Trotting Association at the time he made his entry. He further stated Mr. Hemingway should not be permitted to take advantage of the change in the rules of the American Trotting Association, (which would entitle him to 5 per cent more of the purse) since he made his entry in this futurity. Mr. Curtin was directed by the board to so inform Mr. Hemingway.

Mr. Reeves, superintendent of the Horticultural Department, stated there were a number of changes he would like to make in the classification of the Horticultural Department, which would not require much of an increase in the amount of money offered and that he would file a list of recommendations with the secretary prior to the board meeting in February.

Mr. Davis, superintendent of the Ticket Auditing Department, indicated there were no recommendations or changes to be made in his department.

Mr. Escher, superintendent of the Sheep Department, recommended that the center roof on the sheep barn be raised so as to provide sleeping quarters for the shepherds and also recommended that more steps be taken to lay the dust in the aisles of the sheep barn as it caused the exhibitors a great deal of annoyance by getting into the fleeces of the sheep; also that the board offer a classification for milk goats, provided the board have assurance that at least two or three flocks would be exhibited.

Mr. Sheldon, superintendent of the Agricultural Department, recommended that a feature exhibit be planned to take the place of the "Horn of Plenty;" that all canned goods be judged by appearance; that a classification be offered for war breads, and that a third premium of $1 be offered in the classification for cakes. Mr. Sheldon also recommended that better provisions be made for showing the exhibits in the culinary department. The claim of Mrs. Smith, Malvern, Iowa, was presented to the board by Mr. Sheldon and the matter was referred to Mr. Sheldon and the secretary for adjustment.

Mr. Morrow, Treasurer, recommended that at the time East 30th Street is paved that the board also arrange to pave the entrances at Grand Avenue and at 30th and Walnut streets, and that exit turnstiles be provided on both the north and south sides of the Grand Avenue entrance.

Mr. C. F. Curtiss, Superintendent of the Horse Department, indicated to the board that there were no important changes to be made in the horse department classification, though possibly the classification for standardbreds might be reduced this year. The revision of the classification to be filed with the secretary prior to the meeting of the board in February.

Mr. Curtiss made a suggestion of general interest to the board. He suggested that the board offer a war production medal in connection with the best production of crops, quality, and value to be considered; also medal for the best production of live stock, quality and value to be considered. The matter was discussed by the board but no recommendations were made.

Mr. Olson made no recommendations for his department but said he hoped the board would instruct the Executive Committee to thoroughly improve the camp ground roads, toilets and lighting system.

Mr. Escher moved that the board adjourn until 2:30 p. m. Motion seconded and carried.

AFTERNOON SESSION.

The following members answered to roll call: Cameron, Olson, Corey, Weaver, Davis, Reeves, Legoe, Curtiss, Sheldon, Escher, Mullen and Pike.

Mr. Sheldon moved the $25 premium on the surety bond required by the secretary be paid by the department. Mr. Reeves seconded the motion. Motion prevailed.

The secretary presented a communication from Professor Ferrin, Superintendent of the Boys' Judging Contest, in which he recommended that $1,000 in ten scholarships be offered as prizes in this contest. After due consideration by the board Mr. Davis moved that the money offered in the Boys' Judging Contest be increased from $600 to $800 and that eight scholarships be offered in place of five. The scholarships to be divided as follows : $200, $150, $125, $100, $75, $50, $50, $50. Motion seconded by Mr. Escher and carried.

The following officers of the Interstate Pet Stock Association appeared before the board and requested that a classification for pet stock be offered at the 1918 state fair: G. E. Thornton, President; Frank Harris, Vice President; C. S. Gibson, Secretary of the National Pet Stock Association. After the hearing the board requested that the secretary, in cooperation with the officers of the Pet Stock Association, work out a classification and present it to the board in February.

The secretary presented the communication from the Chester White Association in which they offered to contribute $300 to a futurity provided the Iowa State Board of Agriculture would contribute $100. Mr. Escher moved that the offer of the association be accepted. Motion seconded by Mr. Pike and carried.

Mr. Curtiss moved that the Executive Committee be authorized to employ a superintendent of grounds for the ensuing year. Seconded by Mr. Escher. Motion prevailed.

Mr. Curtiss moved that the Executive Committee proceed with the selection of superintendents for the various departments of the 1918 fair. Seconded by Mr. Sheldon and carried.

The schedule of dates for the Middle West fairs was presented to the board and after a thorough discussion Mr. Reeves moved that the dates for the 1918 Iowa State Fair be August 21 to 30 inclusive, the same relative dates that the Iowa State Fair has held for a number of years. Mr. Pike seconded the motion. Motion prevailed.

The matter of offering additional money in the Belgian Division of the National Draft Horse Futurity was brought to the attention of the Board.

Mr. Curtiss moved the board offer $400 in the Belgian Futurity on condition that the Belgian Association offer $200. Mr. Olson seconded the motion. Motion prevailed.

The secretary presented the schedule of salaries for employees and recommended that the salary of Mr. Whitted, Superintendent of Publicity, be increased from $125 to $150 per month; that Mr. O'Brien, in charge of the Stallion Registration Division, be increased from $125 to $140 and that the salary of Edith K. Smith be increaased from $100 to $110 per month. Mr. Curtiss moved that the revision of salaries as recommended by the secretary be approved and authorized by the board.

The board again considered the proposition of cementing the aisles in Machinery Hall and possibly the aisles in the Exposition Building. Mr. Curtin moved that the question of flooring the aisles in Machinery Hall and the Exposition Building, making the necessary repairs to the Exposition Building to prevent leaks and building necessary walks and steps leading up to the building, be left to the Executive Committee and Superintendents Legoe and Mullen with power to act. Mr. Weaver seconded the motion. Carried.

Mr. Escher moved that the board approve the recommendation of Mr. Tow of the Swine Department and that where any association will offer $50 for prizes in the Boys' and Girls' Pig Club work that the board offer an equal amount for this work. Seconded by Mr. Davis. Motion carried.

The president appointed Messrs. Pike, Legoe and Reeves as committee on per diem and mileage.

The Executive Committee made the following report on superintendents for the 1918 fair:

Public Safety	E. T. Davis, Iowa City
Admissions	O. A. Olson, Forest City, Director in Charge
	Mr. N. W. McBeath, Whiting, Superintendent
Ticket Auditing	H. O. Weaver, Wapello
Concessions and Privileges	A. R. Corey, Des Moines
Live Stock Sanitation	J. I. Gibson, Des Moines
Horses, Ponies and Mules	Charles F. Curtiss, Ames
Speed	E. J. Curtin, Decorah
Cattle	H. L. Pike, Whiting
Swine	Cyrus A. Tow, Norway
Sheep	Chas. Escher, Jr., Botna
Implements and Machinery	J. P. Mullen, Fonda
Agriculture	F. E. Sheldon, Mt. Ayr
Pantry Stores and Apiary	F. E. Sheldon, Mt. Ayr
Dairy	W. B. Barney, Des Moines
Horticulture	Elmer M. Reeves, Waverly
Floriculture	Wesley Greene, Des Moines
Exposition Building, Textile, China, etc.	T. C. Legoe, What Cheer
Educational	E. C. Bishop, Ames
Boys' Judging Contest	E. F. Ferrin, Ames
Publicity and Advertising	Ivanhoe Whitted, Des Moines

Mr. Curtiss moved that the list of superintendents recommended by the Executive Committee be approved by the board. Motion seconded and carried.

Mr. Curtiss moved that the management of the 1917 fair be delegated to the Executive Committee and the elective members of the State Board of Agriculture. Seconded by Mr. Reeves. Motion carried.

Mr. Pike moved that the board recommend to the Governor the appointment of Dr. Geo. M. Chappel to succeed himself as director of the Iowa Weather and Crop Service Bureau for the term of two years commencing July 1, 1918. Seconded by Mr. Legoe. Motion carried.

With the approval of the board the president instructed the secretary to call a meeting of the board for February 7 and 8 for the purpose of revising the premium list and transacting such business as might be brought to the attention of the board at that time.

The question of continuing the Boys' State Fair Camp was considered. Mr. Curtin moved the Boy's Camp be continued on about the same basis as last year. Seconded by Mr. Olson. Carried.

The committee on per diem and mileage made the following report and on motion of Mr. Escher, seconded by Mr. Sheldon the report was approved and the secretary instructed to draw warrants for the following amounts:

December 31, 1917.

Mr. President: Your committee on per diem and mileage beg to report as follows:

	Name	Days	Rate	Amount	Miles	Amount	Total
14840	C. E. Cameron.......	6	$4.00	$24.00	140	$14.00	$38.00
14841	O. A. Olson..........	6	4.00	24.00	155	15.50	39.50
14839	C. H. Tribby.........	4	4.00	16.00	144	14.40	30.40
14842	H. O. Weaver........	3	4.00	12.00			12.00
14843	E. T. Davis..........	6	4.00	24.00	121	12.10	36.10
14844	Elmer Reeves	6	4.00	24.00	126	12.60	36.60
14845	E. J. Curtin..........	6	4.00	24.00	195	19.50	43.50
14846	Cyrus A. Tow........	6	4.00	24.00	112	11.20	35.20
14847	T. C. Legoe..........	6	4.00	24.00	85	8.50	32.50
14848	C. F. Curtiss.........	6	4.00	24.00	37	3.70	27.70
14849	F. E. Sheldon........	6	4.00	24.00	123	12.30	36.30
14850	Chas. Escher, Jr.....	6	4.00	24.00	100	10.00	34.00
14851	Jno. P. Mullen.......	6	4.00	24.00	117	11.70	35.70
14852	H. L. Pike...........	6	4.00	24.00	206	20.60	44.60
							$482.10

Respectfully submitted,

H. L. Pike,
T. C. Legoe,
E. M. Reeves.

Mr. Curtin moved that the Executive Committee be authorized to engage bands and attractions for the 1918 fair. Motion seconded by Mr. Weaver. Carried.

The secretary informed the board that the office of exhibits under Secretary of Agriculture Houston, was preparing a number of exhibits for state fairs this year and that any fair desiring these exhibits should make application to the secretary of agriculture for them. Mr. Curtiss moved the secretary be instructed to make application for these exhibits and that other departments of the Government be invited to send exhibits in all lines in which they are prepared to make them. Motion seconded by Mr. Davis and carried.

Mr. Bishop, superintendent of the Educational and Boys and Girls' Club Work Departments, made the following report and recommendations to the board:

STATE BOARD OF AGRICULTURE:

I present herewith report of the Educational Department for the year 1917.

The exhibit as outlined in the premium list of the Educational Department was carried out as scheduled. The school exhibits were placed in the quarters provided in the Exposition Hall and the club exhibits in the Boys' and Girls' Club Building, with the exception of some exhibits which were loaned to the Rural School Department in the Women and Children's Building to occupy space for which they had no exhibits. In the Boys' and Girls' Club Building demonstrations in canning of field corn for 4H Brand breakfast food were conducted each day and provision was made for serving the canned product at cost to visitors. Demonstrations were also conducted in the Club Building by Garment Making Clubs in making Girls' Club dress and uniform.

Canning demonstration team work was conducted in the south end of the State College Building. Twenty-two teams consisting of four members and the leader in charge entered. Twenty-one of these teams were present from one to three days each and took part. One team failed to reach Des Moines on account of an automobile wreck which occurred on their way to Des Moines. At the conclusion of these contests the state champion canning demonstration team was chosen to represent Iowa in the interstate canning demonstration contest.

The Boys' and Girls' Club day was carried out with an estimated attendance of 1,500 club members and leaders. The parade was especially successful this year and the interest it created promises good for next year's program.

The Baby Beef Club exhibit was especially successful this year. The number of calves exhibited and the boys in attendance who cared for them was one feature of interest and encouragement for this work.

The tents provided for sleeping purposes for assistants and for demonstration teams was a most helpful feature and helped to solve one of the difficult problems of caring for young people who come to the fair for participation in the contest.

Allow me to suggest the continuance and further encouragement of canning demonstration team work, the inclusion of demonstration team work by juniors in poultry killing, dressing and carving, and in meat cutting and the drying of vegetable and fruit products. I wish also the continuance of demonstration work in canning field corn for the breakfast food and in the drying of field corn for the corn nuts food products.

I also recommend the continuation of Boys' and Girls' Club Day with the special provisions made for the club parade. We are much in need of more room for handling the demonstration work if it is to be developed to the extent that would seem justifiable. This work should be given where there is the least possible disturbance by noise which will prevent those assembled from hearing the directions given by the demonstration teams.

The premium list has been revised for the 1918 exhibit. I have included in this year's list a limited number of exhibits which seem to be advisable as a part of the war emergency program of encouraging production, conservation and activities that are helpful to the cause of the country at this time. The inclusion of these items in the premium list has made a small increase in the total appropriation for premiums for the Educational Department. The amount appropriated last year by the Educational Department premium list was $1,454. The amount called for in the revised premium list to include the war emergency provisions is $1,549. The premiums added are almost entirely for war breads, dried food products and Red Cross Work.

PREMIUM LIST EDUCATIONAL DEPARTMENT.

Class No. 1	Rural School Work	$ 80
Class No. 2	Graded School Work	89
Class No. 3	High School Work	100
Class No. 4	Collective Exhibits	270
Class No. 5	Illustrated Booklets	54
Class No. 6	School photographs, Iowa School Grounds, Buildings, Equipment Conditions and Activities	111
Class No. 7	Individual Exhibit by any Club Member	55
Class No. 8	Individual One Jar Exhibits	90
Class No. 8½	Dried Food Products	25
Class No. 9	Ten Jar Exhibit by Individual	55
Class No. 10	Collective Exhibit by Individual	87
Class No. 11	Canning by Garden Club	61
Class No. 12	Canning Club	61
Class No. 13	County Collective Canning	65
Class No. 14	Manual Training	59
Class No. 15	Sewing and Other Handwork	129
Class No. 16	Cooking	32
Class No. 17	Poultry	26
Class No. 18	Correlation Work	45
Class No. 19	Discretionary	55
		$1,549

Mr. Olson moved that the recommendations made by Professor Bishop be approved and that 4,000 copies of the premium list be printed and distributed at once. Motion seconded. Carried.

Mr. Escher moved that the board adjourn to meet on February 7 and 8 as per the order of the president.

PART II

Proceedings of State Agricultural Convention.

Wednesday, December 12, 1917.

The convention was called to order by President C. E. Cameron, at 10 a. m. in the Agricultural Rooms at the State House. Vice-President O. A. Olson was called to the chair and announced that the first number on the program would be the annual address of the president of the State Board of Agriculture.

PRESIDENT'S ADDRESS.

C. E. CAMERON, ALBIA.

Mr. President and Members of the Sixty-third Annual Agricultural Convention:

The harvest has come and gone and we have again assembled to prepare the seed bed for the agricultural fairs of Iowa for the year 1918. The harvest of 1917 certainly was a great one as is shown by the reports of all the fairs.

In the early spring we were unable to determine what the future had in store for us; we were undecided whether to go ahead with our usual preparation for the fairs or commence to retrench. Believing that the old saying "nothing ventured, nothing gained" is as true today as ever we decided to make the venture and the result was a fair and exposition that broke all records in attendance and receipts. We had often dreamed and hoped that the great Iowa State Fair would some day have three hundred thousand people pass through the gates. Our dreams and aspirations were more than fulfilled this year when there were admitted to the grounds three hundred thousand and forty-eight people, and that does not in any way include the forty-six hundred soldiers encamped upon the grounds. That the fair was a success in a financial way is evidenced by the fact that the total receipts were $257,122.56 and the expenses $189,533.38, showing a profit for the fair of $67,589.18.

You may wonder what brought about the great increase in attendance this year. Was it the soldiers encamped upon our grounds? That was one factor but the people of Iowa are commencing to realize not only the benefits to be derived from attending the fair but they are becoming interested in showing the resources of this great state. The management is continually encouraging all avenues of education among the young men and women of the state. The boys' and girls' clubs, domestic science, canning clubs, boys' farm work, spelling contests and numerous other club contests which bring the boys and girls from the farm for a school of instruction all help to keep ever in their minds a desire to attend the fair.

The coming year should be more interesting to the average Iowan than any year in the past. Right now, from an agricultural standpoint, Iowa occupies a position of pre-eminent importance, for the whole world is looking to these great agricultural states to produce more of the necessaries of life to carry on this great struggle for democracy.

I am proud of Iowa, not only for what she is doing to help feed the world, but also because whenever Uncle Sam calls on her to buy Liberty Bonds, to help the Red Cross, or subscribe to the Y. M. C. A. fund, the people are always there with the goods. Iowa as a whole this year had a magnificent crop and the prices received for these products are simply wonderful. It is true our corn crop did not nature as we would like to have had it, but the yield was great and after deducting the soft corn and feeding it to our hogs and cattle the balance of marketable corn left will at the market prices far exceed per acre what the average farmer ever dreamed of.

You talk about the high price of Iowa land. In my opinion this same land that is now selling for from $200 to $300 per acre will be selling within the next ten years for from $300 to $500 per acre. You may wonder why I make this prediction. In the first place there is no state in the Union that has as rich soil and no state whose climatic conditions are more nearly ideal for a good crop as in this great State of Iowa. Iowa has never had a total crop failure. Iowa has always something to sell and most of the time more than an average crop. Agriculture today is the slogan of the world, and Iowa will do more than any other state in this Union to make that slogan good. America will win this war and the farmers will be one of the greatest factors in doing it. America with one-third of the gold of the world and supplying all the allies with means and food to carry on their part in this war, that when this war is over the United States will stand out pre-eminently the greatest nation on the face of the globe. She is now from an agricultural standpoint and then she will be from a financial standpoint, and that is the reason why I say this land between the two great rivers will be worth from $300 to $500 per acre; because Iowa has stood the test, not only in times of peace but in war.

At the annual meeting of the American Association of Fairs and Expositions last week in Chicago there was represented a larger delegation than has even been present at a meeting held by that association. Out of a total membership of fifty-eight, forty-six societies sent delegates; all of these came from states ranging from California to New York; from Florida to Canada, and a more enthusiastic bunch of fair managers was never before gathered together. With the exception of three or four all reported a larger attendance and greater receipts for this year than any year in the history of their societies. The three or four who reported a decrease credited it to bad weather and I think that reason holds good with all state, county and district fairs.

I wish to give you an extract from the report of the committee on statistics for the American Association of Fairs and Expositions. "What fairs and expositions represent is an important question to the Federal Government, in the consideration of the establishment of desired co-operation, the committee believes is an answer to the question: What do the fairs and expositions of the American Association of Fairs and expositions represent? In a material way the fifty American fairs and expositions in this association represent, in round figures, a combined investment of $50,000,000. They are operated at a cost exceeding $5,000,000 each year. Their receipts each year exceed $5,000,000 and they are attended by more than 8,000,000 people. This includes all of the big fairs and expositions in the United States. They are the leaders among the fairs of the country and each in its own state, or wider tributary territory, sets the pace for the smaller fairs. The importance of these fifty fairs and expositions in this one respect alone may be partly realized when it is known that there are in the United States 1,500 smaller fairs and expositions which show a combind attendance of over 25,000,000. The committee contends that the 33,000,000 people attending fairs and expositions each year represent the great masses of citizens of our country. They represent the very people to be reached with war propaganda in times of war or with Federal and other propaganda on production during times of peace."

We should all feel proud that we are interested in a work that interests almost one-third of the population of the United States. Never in the history of our fairs should we be more interested than in the work for 1918. I wish to say to the managers of the fairs for the coming year that there is a great work for you to do; that is to interest your exhibitors in making your fair of 1918 the greatest in its history from an agricultural standpoint.

President Cameron appointed the following committees:

Committee on Credentials: J. P. Mullen, Pocahontas County; H. C. Leach, Davis County; E. G. Strong, Page County.

Committee on Resolutions: H. S. Stanberry, Blackhawk County; E. W. Williams, Delaware County; S. D. Quarton, Kossuth County.

REPORT OF SECRETARY.

A. R. COREY.

Mr. President and Gentlemen of the Convention:

I have prepared quite a lengthy report of the fair this year, but I am not going to read all of it to the convention. I found, after I had prepared this report, that it consisted of some sixty-seven printed pages, and I know it would be tiresome to hear it all read, because a good bit of it is statistics. However, there is a portion of it that I desire to bring to your attention.

When we started preparing for this year's fair a good many people thought it would be a bad year for fairs and that fairs generally would not be a success. However, our board made an extensive investigation of the condition of Canadian fairs and the information gained caused us to believe there was not much foundation for this opinion. We secured reports from the Canadian fairs for a period of one year before the war and three years during the war. While these reports indicated they were hit rather hard the first year of the war each of the following years showed an increase in attendance. So with that information before us we went ahead with the usual extensive plans for the 1917 fair.

While our live stock exhibits in previous years have been larger in some departments, especially the cattle and horse departments, yet our swine exhibit this year was the largest we have ever had, every pen in the swine pavilion was filled. The sheep exhibit was also the largest we have ever had on the grounds. Our machinery exhibit was equal to anything we have had in five years. The tractor exhibit was the best we have ever had.

As far as the attendance at the fair is concerned, it was the banner year and in fact far exceeded our expectations. As Mr. Cameron said, we had been anticipating some day reaching the 300,000 mark, but this year we passed it by a good margin and our official count showed an attendance of 349,298. The total receipts this year exceeded last year, which was our best previous year, by about 25 per cent and totaled $257,122.56.

The expense of conducting the fair was naturally increased because of the increased cost of labor and material, and the fact that we paid out about $5,000 more in premiums. Another item of expense that increased the cost of fair this year was the forage which we handled ourselves, and that had increased about 33 1-3 per cent. Our music cost more, and our payroll throughout was quite a lot more. Labor was about double that of last year. The cantonment was responsible for that to a certain extent as they were paying $7 a day for carpenters and $3.65 a day for common laborers, and in order to get the men we had to meet these prices.

There is just one other thing I care to say, and that is not only the fair management but every citizen of the State of Iowa should be proud of the success of the Iowa State Fair this year. The board started the year with an indebtedness of about $20,000 at one of the local banks; the buildings at the fair grounds were all in need of repair and painting. We wound up the year's business with every building on the grounds painted and put in first-class repair, and after paying for all those improvements we had a balance of $35,000 left in the treasury, so we feel very happy over the year's work.

NOTE—The complete printed report of the secretary, placed in the hands of those present, was as follows:

ACTIVITIES OF THE DEPARTMENT.

The activities of the State Board of Agriculture and the Department of Agriculture are defined and limited by statute. The principal duties imposed upon the board and department are to manage the state fair, administer the laws governing the enrollment of stallions and to issue certificates of enrollment and soundness for all stallions offered for public service, sale, exchange or transfer in the state; publish the Iowa Year Book of Agriculture annually, collect and tabulate farm and crop statistics, verify the reports of the county and district fairs, farmers' institutes and short courses making application for state aid, and to promote the interests of agriculture, live stock and other industries throughout the state.

A complete report of this work will be published in the year book of agriculture and the supplement to the year book containing a report of the stallion registration division. Therefore only a short review will be included in my report to this convention.

STALLION REGISTRATION DIVISION.

During the year of 1917 the Department has issued 5,219 certificates for pure bred stallions, 1,717 for grade stallions, 506 for pure bred jacks and 468 for grade jacks. In each instance it is a smaller number than last year, with the exception of pure bred jacks which show an increase.

A decrease in the enrollment for this year is applicable not only to Iowa but to other states as well. Various conjectures have been advanced as to the reason for this, one of course is self evident, i. e., that the percentage of grades is being materially lessened due to the successful application of the stallion laws and the educational results emanating therefrom. On the other hand but few stallions have been imported during the past year.

The total decrease this year is approximately 1,200; of this 430 was in grade certificates and 770 in pure breds. In comparison to the total number enrolled the decrease in grades is larger than in pure breds and the result is 75 per cent of pure bred stallions for 1917, the highest percentage of pure breds attained in this or any other state.

The horse breeding situation for the past year has been unstable in many ways; as to what the future will bring forth remains to be seen. Motor trucks and farm tractors are becoming more numerous each year and are taking the place of a great many draft horses.

The fact that there is a certain amount of farm and other work that cannot be done as economically, or as satisfactorily, with trucks or tractors, as with the draft horse should not be lost sight of and for this reason good heavy draft animals will be in demand for years to come.

STATE PUBLICITY BUREAU.

The publicity bureau, operated in conjunction with the department of agriculture and financed from state fair receipts and the fees received through the stallion registration division has revealed a wonderful field for work of this nature.

The limited funds set aside by the board for this purpose, the lack of statutory authority, and the fact that the state makes no appropriation for the work places a handicap upon the bureau. The work so far has been limited to publishing a monthly publication known as "Greater Iowa," the subscription for which is free. About 200,000 copies were published during the year and mailed to a selected list of 15,000. In addition to this news letters and items of interest to agriculture and live stock industries have been sent to the state papers from time to time. The Bureau wishes to thank the press of the state for the liberal use of these items and numerous articles used from "Greater Iowa."

FARMERS' INSTITUTES AND SHORT COURSES.

There is presented herewith two tables showing the number and location of institutes and short courses held during the 1916-17 season. The tables also show the number of sessions held by each organization, total attendance, state aid paid to each, cost of conducting and data relative to receipts and expenditures.

There was a total of 129 institutes and short courses held. The total attendance was 224,461. State aid amounted to $7,213.79 and the total cost $40,782.60.

FINANCIAL STATEMENT OF COUNTY FARMERS' INSTITUTES IN IOWA FOR FISCAL YEAR JULY 1, 1916, TO JUNE 30, 1917.

Number	Counties	Number of sessions	Total attendance	Receipts					Disbursements					Number
				Cash on hand	Miscellaneous receipts	State aid	Total receipts	For speakers and judges	Premiums	Miscellaneous expense	Total disbursements	Cash on hand	Overdrafts	
1	Adair (Canby)	5	1,100	$ 61.02	$ 264.31	$ 37.50	$ 362.83	$ 25.30	$ 150.00	$ 50.26	$ 225.56	$ 137.27	-------	1
2	Adair (Adair)	2	250	43.07	----------	37.50	80.57	6.25	60.50	18.15	84.90	---------	$ 4.33	2
3	Appanoose (Moulton)	6	1,000	---------	217.30	25.00	242.30	22.75	67.43	62.01	152.19	90.11	-------	3
4	Appanoose (Udell)	21	11,200	39.76	153.60	25.00	218.36	17.98	60.12	98.23	176.33	42.03	-------	4
5	Appanoose (Moravia)	7	5,600	97.46	269.65	25.00	392.11	6.61	219.61	65.20	291.42	100.69	-------	5
6	Appanoose (Mystic)	12	8,000	13.43	877.36	---------	890.79	41.07	432.25	459.53	932.85	---------	42.06	6
7	Allamakee (Rossville)	8	650	320.15	61.50	75.00	456.65	64.27	65.50	14.18	143.95	312.70	-------	7
8	Benton (Blairstown)	6	740	12.79	256.25	25.00	294.04	14.82	125.75	86.67	227.24	66.80	-------	8
9	Benton (Vinton)	9	2,180	10.00	501.35	25.00	536.35	136.84	47.00	225.31	409.15	127.20	-------	9
10	Benton (Keystone)	12	445	20.43	786.55	25.00	831.98	53.77	173.25	519.43	746.45	85.53	-------	10
11	Benton (Garrison)	3	740	123.12	423.50	---------	546.62	17.05	286.50	124.59	428.14	118.48	-------	11
12	Black Hawk (Hudson & La Porte)	4	2,400	---------	----------	75.00	75.00	52.00	----------	24.00	76.00	---------	1.00	12
13	Boone (Boxholm)	5	350	---------	126.25	75.00	201.25	20.29	71.75	68.00	160.04	41.21	-------	13
14	Bremer (Tripoli)	9	1,865	---------	150.90	75.00	225.90	64.71	31.00	74.86	170.57	55.33	-------	14
15	Buchanan (Independence)	5	3,700	157.25	34.10	75.00	266.35	26.80	20.00	54.75	101.55	164.80	-------	15
16	Buena Vista (Storm Lake)	7	1,800	36.05	253.40	37.50	326.95	---------	155.54	81.05	236.59	90.36	-------	16
17	Buena Vista (Newell)	6	1,200	222.60	526.52	37.50	786.62	90.70	392.00	87.00	569.70	216.92	-------	17
18	Butler (Parkersburg)	5	241	9.69	94.75	75.00	179.44	21.22	94.75	51.14	167.11	12.33	-------	18
19	Calhoun (Rockwell City)	7	675	59.76	152.50	75.00	287.26	26.63	115.50	71.90	214.03	73.23	-------	19
20	Carroll (Glidden)	8	888	88.00	173.20	75.00	336.20	58.98	127.50	72.00	258.48	77.72	-------	20
21	Cass (Griswold)	3	6,400	35.00	634.10	37.97	707.07	33.01	464.00	185.89	682.90	24.17	-------	21
22	Cass (Atlantic)	6	225	36.57	6.50	37.03	80.10	17.40	----------	19.63	37.03	43.07	-------	22
23	Cedar (Durant)	6	3,200	---------	522.85	37.50	560.35	74.27	96.50	127.30	298.07	262.28	-------	23
24	Cedar (Massillion)	5	550	37.50	102.87	37.50	177.87	21.90	93.35	47.98	163.23	14.64	-------	24
25	Cerro Gordo (Thornton)	[illegible]	600	---------	70.00	37.50	107.50	64.65	52.00	26.65	143.30	---------	35.80	25
26	Cerro Gordo (Swaledale)	5	1,175	---------	136.50	37.50	174.00	33.53	75.00	33.00	141.53	32.47	-------	26
27	Cherokee (Cherokee)	4	600	23.79	36.75	25.00	85.54	19.08	33.35	19.93	72.36	13.18	-------	27
28	Cherokee (Larrabee)	17	2,550	---------	369.50	25.00	394.50	81.34	124.15	134.08	339.57	54.93	-------	28
29	Cherokee (Washta)	4	340	101.58	101.95	25.00	228.53	28.86	47.50	46.85	123.21	105.32	-------	29
30	Clay (Everly)	8	2,400	1.18	183.41	25.00	209.59	59.16	75.00	52.56	186.72	22.87	-------	30
31	Clay (Dickens)	3	350	13.51	13.80	25.00	52.31	12.38	27.00	7.90	47.28	5.03	-------	31

32	Clay (Cornell)	7	718	21.60	29.50	25.00	76.10	41.66	14.69	6.25	62.60	13.50	-------	32
33	Clayton (Edgewood)	9	2,200	20.21	118.60	47.60	186.41	16.51	57.50	59.00	133.01	53.40	-------	33
34	Clayton (Luana)	4	418	---------	10.75	27.40	38.15	20.35	----------	7.05	27.40	10.75	-------	34
35	Clinton (Grand Mound)	7	1,725	62.37	652.65	75.00	790.02	88.62	453.05	243.99	785.66	4.36	-------	35
36	Dallas (Woodward)	7	5,000	14.70	358.91	75.00	448.61	19.02	192.50	39.86	251.38	197.23	-------	36
37	Davis (Bloomfield)	2	100	20.00	50.00	37.50	107.50	20.39	40.50	43.00	103.89	3.61	-------	37
38	Davis (Pulaski)	6	900	2.75	172.75	37.50	213.00	37.39	99.75	56.50	193.64	19.36	-------	38
39	Decatur (Weldon)	7	1,700	---------	275.00	75.00	350.00	65.79	260.00	24.21	350.00	---------	-------	39
40	Delaware (Manchester)	8	10,150	50.50	324.50	75.00	450.00	55.24	68.80	215.96	340.00	110.00	-------	40
41	Des Moines (Danville)	11	9,950	92.72	750.60	75.00	918.32	99.60	595.00	203.75	898.35	19.97	-------	41
42	Dickinson (Spirit Lake)	8	300	4.85	84.85	59.80	149.50	37.50	----------	22.30	59.80	89.70	-------	42
43	Dubuque (Cascade)	9	3,950	26.00	101.25	75.00	202.25	119.31	----------	43.00	162.31	39.94	-------	43
44	Emmet (Wallingford)	7	385	83.50	270.30	75.00	428.80	152.89	70.00	62.27	285.16	143.64	-------	44
45	Fayette (Arlington)	3	950	20.56	40.68	75.00	136.24	60.34	----------	23.98	84.32	51.92	-------	45
46	Floyd (Collwell)	6	865	58.83	159.50	75.00	293.33	40.03	159.50	33.78	233.31	60.02	-------	46
47	Franklin (Geneva)	17	3,050	---------	160.54	37.50	198.04	46.59	77.35	30.25	154.19	43.85	-------	47
48	Franklin (Hampton)	14	4,000	---------	420.25	37.50	457.75	112.50	100.00	204.85	417.35	40.40	-------	48
49	Fremont (Sidney)	8	4,400	98.89	712.65	75.00	886.54	40.10	644.41	75.85	760.36	126.18	-------	49
50	Guthrie (Panora)	4	525	63.12	100.50	75.00	238.62	25.29	148.25	12.10	185.64	52.98	-------	50
51	Hamilton (Homer)	3	375	---------	10.20	75.00	85.20	34.98	30.75	25.00	90.73	---------	5.53	51
52	Hancock (Britt & Garner)	6	1,650	---------	62.00	75.00	137.00	73.67	36.00	43.53	153.20	---------	16.20	52
53	Hardin (Ackley)	10	3,100	279.58	752.70	75.00	1,107.28	85.00	393.10	260.00	738.10	369.18	-------	53
54	Harrison (Mondamin)	22	1,775	28.00	363.13	63.00	454.13	198.38	57.15	107.60	363.13	91.00	-------	54
55	Harrison (Woodbine)	6	300	---------	----------	12.00	12.00	---------	----------	12.00	12.00	---------	-------	55
56	Henry (Mount Pleasant)	4	2,000	66.25	568.43	75.00	709.68	35.17	466.30	198.25	699.72	9.96	-------	56
57	Howard (Cresco & Chester)	11	1,625	---------	----------	58.49	58.49	32.83	6.00	19.66	58.49	---------	-------	57
58	Humboldt (Bode, Humboldt, Renwick, Rutland, Pioneer, Thor)	35	1,740	12.00	400.00	75.00	487.00	259.70	115.50	95.00	470.20	16.80	-------	58
59	Iowa (Williamsburg)	4	390	63.79	167.10	75.00	305.89	45.55	117.50	66.06	229.11	76.78	-------	59
60	Jackson (Bellevue)	23	2,350	13.70	558.25	37.50	609.45	194.30	8.00	399.47	601.77	7.68	-------	60
61	Jackson (Preston)	6	2,300	3.75	67.00	37.50	108.25	27.85	67.00	47.15	142.00	---------	33.75	61
62	Jasper (Colfax)	5	6,750	16.50	550.00	25.00	591.50	15.70	391.50	139.30	546.50	45.00	-------	62
63	Jasper (Mingo)	4	1,900	9.53	263.60	25.00	298.13	23.76	216.54	26.00	266.30	31.83	-------	63
64	Jasper (Prairie City)	7	515	76.19	289.20	25.00	390.39	39.78	195.35	63.11	298.24	92.15	-------	64
65	Jefferson (Lockridge)	5	2,500	2.35	149.02	75.00	226.37	50.95	108.00	47.02	205.97	20.40	-------	65
66	Johnson (Sharon Center)	7	1,115	---------	75.00	37.50	112.50	43.65	----------	33.71	77.36	35.14	-------	66
67	Johnson (Iowa City)	5	1,500	16.92	178.35	37.50	232.78	29.45	144.75	60.36	234.56	---------	1.78	67
68	Jones (Martelle)	9	1,175	---------	102.50	75.00	177.50	31.37	51.75	44.38	127.50	50.00	-------	68
69	Keokuk (Thornburg)	5	1,180	---------	337.70	75.00	412.70	152.23	25.00	151.18	328.41	84.29	-------	69
70	Kossuth (Swea City)	6	350	8.5	66.50	37.50	112.53	103.74	5.00	28.50	137.24	---------	24.71	70
71	Kossuth (Titonka)	3	1,000	---------	497.54	37.50	535.04	225.00	40.00	69.55	334.55	200.49	-------	71
72	Lee (Donnellson)	5	1,400	217.5	419.75	75.00	712.29	95.65	300.00	64.88	460.53	251.76	-------	72
73	Linn (Coggon)	5	1,000	42.6	54.65	37.50	134.75	45.53	52.50	14.30	112.33	22.42	-------	73
74	Linn (Walker)	9	935	42.1	61.37	37.50	140.97	26.41	56.50	40.10	123.01	17.96	-------	74
75	Lyon (Inwood)	9	1,800	87.6	491.36	75.00	654.02	123.75	149.50	170.81	444.06	209.96	-------	75
76	Mahaska (Barnes City)	7	1,750	21.1	121.50	37.50	180.13	16.57	48.75	115.02	180.34	---------	.21	76
77	Mahaska (Oskaloosa)	5	2,320	582.8	86.60	37.50	706.93	33.51	93.00	118.97	245.48	461.45	-------	77

FINANCIAL STATEMENT—Continued

Number	Counties	Number of sessions	Total attendance	Receipts					Disbursements					Number
				Cash on hand	Miscellaneous receipts	State aid	Total receipts	For speakers and judges	Premiums	Miscellaneous expense	Total disbursements	Cash on hand	Overdrafts	
78	Marshall (Clemons)	8	960	--------	40.00	75.00	115.00	17.25	173.50	19.04	209.79	--------	94.79	78
79	Mitchell (Little Cedar)	6	1,350	--------	20.00	75.00	95.00	56.63	12.00	19.93	88.56	6.44	-------	79
80	Montgomery (Stanton)	6	806	36.49	212.35	37.50	286.34	84.39	70.00	64.05	218.44	67.90	-------	80
81	Montgomery (Grant)	9	600	24.75	98.65	37.50	160.90	10.00	154.00	32.50	196.50	--------	35.60	81
82	Muscatine (Wilton Junction)	6	3,050	--------	522.85	75.00	597.85	74.27	96.50	127.30	298.07	299.78	-------	82
83	O'Brien (Archer)	8	750	--------	--------	67.39	67.39	38.39	23.75	5.25	67.39	--------	-------	83
84	Page (Clarinda)	6	2,400	1.17	779.65	75.00	855.82	126.71	481.50	174.90	783.11	72.71	-------	84
85	Palo Alto (Graettinger)	6	1,900	97.98	191.30	37.50	326.78	93.72	105.65	87.15	286.52	40.26	-------	85
86	Palo Alto (Emmetsburg)	7	1,375	46.86	18.15	37.50	102.51	35.96	19.75	26.50	82.21	20.30	-------	86
87	Polk (Altoona)	7	2,000	120.42	564.03	25.00	709.45	34.20	495.85	89.83	619.88	89.57	-------	87
88	Polk (Runnells)	4	1,000	48.16	176.70	25.00	249.86	24.49	57.40	44.03	125.92	123.94	-------	88
89	Polk (Mitchellville)	4	1,000	299.23	350.05	25.00	674.28	25.75	466.50	45.00	537.25	137.03	-------	89
90	Poweshiek (Brooklyn)	7	5,500	.47	779.35	37.50	817.32	27.26	326.00	239.34	592.60	224.72	-------	90
91	Poweshiek (Searsboro)	6	280	9.01	95.56	37.50	142.07	26.20	76.50	26.87	129.57	12.50	-------	91
92	Ringgold (Diagonal	6	1,100	47.95	248.00	75.00	370.95	43.50	220.00	116.00	379.50	--------	8.55	92
93	Scott (Princeton)	6	2,030	81.67	145.80	25.00	252.47	37.28	108.50	30.56	176.34	76.13	-------	93
94	Scott (Dixon)	6	1,450	111.66	190.35	25.00	327.01	35.88	114.50	114.64	265.02	61.99	-------	94
95	Scott (Eldridge)	6	870	133.48	549.56	25.00	708.04	63.58	112.25	331.30	507.13	200.91	-------	95
96	Shelby (Harlan)	2	140	178.73	146.45	75.00	400.18	36.54	170.50	44.63	251.67	148.51	-------	96
97	Sioux (Ireton)	7	2,350	126.48	277.30	75.00	478.78	37.22	227.50	82.28	347.00	131.78	-------	97
98	Story (Roland)	6	752	14.79	155.27	75.00	245.06	19.41	51.00	22.77	93.18	151.88	-------	98
99	Tama (Traer)	5	300	56.00	--------	62.71	118.71	20.36	37.50	4.85	62.71	56.00	-------	99
100	Van Buren (Douds Leando, Stockport, Birmingham, Bonaparte, Mt. Sterling, Keosauqua)	10	3,000	--------	--------	75.00	75.00	10.50	35.00	31.00	76.50	--------	1.50	100
101	Wapello (Eldon)	6	330	27.93	70.41	37.50	135.84	28.89	15.07	61.40	105.36	30.48	-------	101
102	Wapello (Ottumwa)	6	1,200	133.89	300.00	37.50	471.39	41.35	342.50	57.00	440.85	30.54	-------	102
103	Warren (Indianola)	3	1,025	254.52	72.50	75.00	402.02	21.75	234.50	41.63	297.88	104.14	-------	103
104	Webster (Harcourt)	10	2,200	233.51	299.40	75.00	607.91	28.80	105.17	173.65	307.62	300.29	-------	104
105	Winnebago (Thompson)	14	3,300	--------	436.55	75.00	511.55	116.31	337.75	192.12	646.18	--------	134.63	105
106	Winneshiek (Calmar, Ridgeway and Hesper)	8	445	--------	19.05	75.00	94.05	102.41	--------	--------	102.41	--------	8.36	106
107	Woodbury (Smithland)	3	675	9.32	71.25	37.50	118.07	39.00	--------	37.50	76.50	41.57	-------	107

FINANCIAL STATEMENT—Continued

Number	Counties	Number of sessions	Total attendance	Receipts					Disbursements					Number
				Cash on hand	Miscellaneous receipts	State aid	Total receipts	For speakers and judges	Premiums	Miscellaneous expense	Total disbursements	Cash on hand	Overdrafts	
108	Woodbury (Moville)	5	800	48.77	447.86	37.50	534.13	32.49	255.00	203.79	491.28	42.85	--------	108
109	Worth (Northwood & Hanlontown)	9	390	145.00	35.00	75.00	255.00	105.37	35.00	--------	140.37	114.63	--------	109
	Total	794	204,823	$6,083.51	$26,301.84	$5,498.39	$37,883.74	$5,853.08	$14,901.18	$9,425.70	$30,179.96	$8,152.58	$448.80	

FINANCIAL STATEMENT OF SHORT COURSE ASSOCIATIONS OF IOWA FOR THE YEAR ENDING JUNE 30, 1917.

Number	Counties	Number of sessions	Total attendance	Cash on hand	Miscellaneous receipts	State aid	Total receipts	For speakers and judges	Premiums	Miscellaneous expense	Total disbursements	Cash on hand	Overdrafts	Number
1	Audubon (Audubon)	11	800	--------	$ 304.95	$ 75.00	$ 379.95	$ 130.89	$ 76.00	$ 257.39	$ 464.28	--------	$ 84.33	1
2	Boone (Ogden)	10	700	$ 43.40	377.00	--------	420.40	104.85	80.50	194.30	379.65	$ 40.75	--------	2
3	Carroll (Coon Rapids)	9	1,600	2.50	362.70	--------	365.20	54.15	6.00	278.72	338.87	26.33	--------	3
4	Clarke (Osceola)	22	909	25.00	243.00	127.80	395.80	115.70	132.00	116.25	363.95	31.85	--------	4
5	Dallas (Dexter)	14	750	197.22	609.35	172.44	979.01	101.40	431.10	376.34	908.84	70.17	--------	5
6	Dickinson (Lake Park)	12	2,000	221.05	594.60	--------	815.65	281.94	113.87	263.97	659.78	155.87	--------	6
7	Emmet (Estherville)	20	515	72.13	264.50	102.40	439.03	57.66	256.00	69.48	383.14	55.89	--------	7
8	Greene (Dana)	13	2,100	--------	405.20	75.00	480.20	99.13	168.45	104.80	372.38	107.82	--------	8
9	Louisa (Columbus City)	26	1,100	12.00	477.55	75.00	564.55	103.36	350.00	61.55	514.91	49.64	--------	9
10	Lucas (Chariton)	37	1,050	--------	646.25	75.00	721.25	188.16	150.00	277.70	615.86	105.39	--------	10
11	Madison (Winterset)	10	175	46.87	430.00	256.20	733.07	61.52	453.00	108.08	622.60	110.47	--------	11
12	Marion (Pleasantville)	12	210	132.40	610.56	75.00	817.96	--------	394.20	426.77	820.97	--------	3.01	12
13	Mills (Glenwood)	14	560	--------	385.00	75.00	460.00	114.17	13.50	163.57	291.24	168.76	--------	13
14	Monroe (Albia)	15	1,665	51.77	260.92	75.00	387.69	144.22	9.25	201.79	355.26	32.43	--------	14
15	Pocahontas (Plover)	9	1,600	--------	513.37	75.00	588.37	98.64	31.52	227.02	357.18	231.19	--------	15
16	Ringgold (Mt. Ayr)	9	455	--------	375.00	44.10	419.10	97.75	110.25	216.17	424.17	--------	5.07	16
17	Sac (Odebolt)	18	1,550	--------	629.91	75.00	704.91	172.58	524.25	235.02	931.85	--------	226.94	17
18	Union (Lorimor)	16	800	143.71	582.19	144.18	870.08	271.93	360.45	206.42	838.80	31.28	--------	18
19	Washington (Brighton)	12	608	--------	430.65	118.28	548.93	129.71	108.20	141.62	379.53	169.40	-----	19
20	Wright (Goldfield)	33	500	83.04	487.20	75.00	645.24	102.28	204.53	272.57	579.38	65.86	--------	20
	Total	322	19,638	$1,031.09	$ 8,989.90	$1,715.40	$11,736.39	$2,420.04	$ 3,973.07	$4,199.53	$10,602.64	$1,453.10	$319.35	

COUNTY AND DISTRICT FAIRS, 1917

The season of 1917, contrary to the opinion of a great many people, proved to be the most successful and the banner year for state, county and district fairs. Ninety-three county and district fairs receiving state aid were held in the State of Iowa during the season just closed. This is six less than the number reported in 1916.

The cities and towns that held fairs in 1916 but did not hold a fair this year were: New Hampton, Nashua, Spencer, Charles City, Hampton, Victor, Marengo, Anamosa, Morning Sun, Ottumwa, Sewel and Clio—12.

The following cities returned to the fold and held fairs this year: Massena, Manchester, Chariton, Knoxville, Creston and Agency—6.

The reports filed with the department of agriculture indicate that while there was a fewer number of fairs there was an increase in the total attendance of more than 72,000 and an increase in the total number of paid admissions of about 104,000.

The total attendance of the ninety-three fairs was 1,345,259, the total number of paid admissions 1,094,968. This is a record and the first time the number of paid admissions has reached the million mark.

Another gratifying fact, from a fair manager's standpoint, is the fact that the ninety-three fairs show a total net profit of $111,568 compared with a profit of $76,474 from ninety-nine fairs in 1916.

The total receipts show an increase of about $60,000, this increase comes from the receipts from outside gates, grandstand and concessions. The miscellaneous receipts, receipts from state aid and for entry fees in the speed department show a falling off.

The expense of conducting the ninety-three fairs compared with the ninety-nine in 1916 shows an increase of about $25,000. Practically all of this increase is accounted for in the miscellaneous expense of the fairs and the increase of $8,200.00 paid for music and attractions. There was a decrease of $7,500 paid out in premiums and $1,000 less for speed events.

There was an increase in the total number of exhibitors, counting all departments, with about the same number as last year in the live stock departments.

The reports show a reduction in the number of horses, cattle, and swine and an increase in the number of sheep and poultry on exhibition. The reduction in the number of horses, cattle and swine is no doubt due to the high cost of feed and increased expense in fitting stock for shows.

The amount paid out in premiums on agricultural products, pantry stores and in all other departments totaled about the same as last year, regardless of the fact that there were six less fairs held.

Forty-four, or nearly one-half of the fairs charged 50c admission at the outside gate. The number charging the higher admission increases each year. Thirty-seven charged 50c in 1916; twenty-five in 1915; twenty in 1914; eleven in 1913 and six in 1912.

Forty fairs gave night shows in front of the grandstand with an attendance of 91,766 compared with thirty-three in 1916 with an attendance of 66,600.

For more detailed information attention is called to the four tables compiled from the county fair reports filed with the department.

Table No. 1 is a condensed financial statement showing balance on hand at the close of last year's business, the total receipts of fair, receipts from sources other than fair, such as borrowed money, stock sold, subscriptions, etc., and the grand total receipts. The disbursement side of the table shows the total cost of fair, indebtedness of previous years paid during current year, amount expended for improvement during the year, and the grand total disbursements; also the cash balance on hand or overdraft November 1, 1916, the estimated value of grounds and buildings, and the present interest bearing indebtedness.

Table No. 2 takes into consideration the receipts and cost of the 1917 fairs only. The receipts are itemized as follows: Receipts from outside gates, grandstand and quarter stretch, entry fees, speed department, concessions and privileges, miscellaneous receipts, state aid received and the total receipts. The disbursements have been divided as follows. Premiums paid in all departments except speed, amount paid for speed contests, cost of music and attractions, miscellaneous expense, the total cost of fair and the profit or loss on the 1917 fair.

Table No. 3 is a tabulation showing the total number of exhibitors at the fair, number of exhibitors in the live stock departments, the number of horses, cattle, swine, sheep and poultry on exhibition, and the amount of premiums paid in each division. Also the amount of premiums paid on agricultural products, pantry and kitchen products, fine arts, and the total premiums paid in all departments.

Table No. 4 sets forth the total attendance, total number of paid admissions, the admission fee charged, adults, children and vehicles at the outside gate. Also the day admission fee charged at grandstand and the total number of admissions to the day and night grandstand performance.

Inasmuch as the laws pertaining to the county and district agricultural societies have been amended from time to time and appear in three different volumes there is presented herewith the laws in the amended form.

Section 1658. **County Societies**—Premiums. County and district agricultural societies may annually offer and award permiums for the improvement of stock, tillage, crops, implements, mechanical fabrics, articles of domestic industry, and such other articles and improvements as they may think proper, and so regulate the amount thereof and the different grades as to induce general competition.

Section 1659. **List of Awards.** Each county and district society shall annually publish a list of the awards, and an abstract of the treasurer's account, in one or more newspapers of the county, with a report of its proceedings during the year, and a synopsis of the awards. It shall also make a report of the condition of agriculture in the county to the board of directors of the state agricultural society, which shall be forwarded on or before the first day of November in each year to the secretary of said society. The auditor of state, before issuing a warrant in favor of such societies for any amount, shall demand the certificate of the secretary of the state society that such report has been made. Any society failing to report on or before the first day of November shall not receive state aid for that year.

Section 1660. **Appropriation from County**—Levy of tax for—question submitted—notice—title in county—control. That when a district or county agricultural society or fair shall have procured in fee simple, land for fair grounds, not less than ten acres in extent, or hold and occupy such amount of land by virtue of a lease, and own and have thereon buildings and improvements worth not less than two thousand dollars, the board of supervisors of the county wherein such agricultural society or fair is located, may appropriate and pay to it a sum not exceeding one hundred dollars for every thousand inhabitants in the county, to be expended by it in fitting up or purchasing such fair grounds, but for no other purpose; but the aggregate amount so appropriated shall not exceed ten hundred dollars to any one society or fair. The board of supervisors are further authorized to purchase real estate for county or district fair purposes, in sums exceeding ten hundred dollars, providing, however, that the board of supervisors shall first have submitted to the legal voters of the county a proposition therefor, and voted for by a majority of all persons voting for and against such proposition at a general or special election; notice to be given as provided in section 423 of the supplement to the code. And the board of supervisors shall not exceed in the purchase of such real estate, the amount so voted for; the title of such real estate when purchased to be taken in the name of the county, and the board of supervisors shall place such real estate under the control and management of all incorporated county or district fair society, as long as an annual county or district fair is maintained by such corporation on said real estate. And said corporation is authorized to erect and maintain buildings and make such other improvements on said real estate as is necessary, but the county shall not be liable for such improvements, or the expenditures therefor. The right of such county or district fair society to the control and management of said real estate may be terminated by the board of supervisors whenever well conducted agricultural fairs are not annually held thereon. The board of supervisors of any county which has acquired real estate for county or district fair purposes and which has a county or district fair association using said real estate may levy a direct tax upon all of the property of the county to produce an amount not to exceed the sum of one thousand dollars in any one year; which money shall be expended only for the erection and repair of buildings or other permanent improvements on the fair grounds or for the payment of debts contracted in the erection of such buildings, or other permanent improvements. Shares of stock, non-assessable, shall be issued to the county, at par value for the amount of money received by said society from taxes raised under this act.

Section 1661-a. **State aid to district or county society**—failure to report. Any county or district agricultural society, upon filing with the auditor of state affidavits of its president, secretary, and treasurer showing what sum has actually been paid out during the current year for premiums, not including races, or money paid to secure games or other amusements, and that no gambling devices or other violations of law were permitted, together with a certificate from the secretary of the state society showing that it has reported according to law, shall be entitled to receive from the state treasury a sum equal to sixty per cent of the amount so paid in premiums, up to one thousand dollars, and twenty per cent additional of the amount paid in premiums over one thousand dollars, but in no case shall the amount paid to any society exceed the sum of eight hundred dollars. When any society fails to report, according to law, on or before the first day of November, that society shall not receive a warrant from the state auditor for that year, but the secretary of the state board of agriculture shall notify the county auditor of the county in which the society is located of such failure, and the board of supervisors may appoint a delegate to the annual meeting or state agriculture (agricultural) convention, said delegate to be a resident of said county.

TABLE NO. 1—FINANCIAL STATEMENT OF COUNTY AND

Number	County and City or Town	Balance on hand	Receipts		
			Receipts of fair	Receipts from sources other than fair	Total receipts
1	Adair, Greenfield	$ 1,511.33	$ 6,237.80	$ 657.42	$ 8,406.55
2	Adams, Corning	-----------	3,109.10	698.54	3,807.64
3	Allamakee, Waukon	-----------	4,649.71	527.79	5,177.50
4	Audubon, Audubon	51.52	6,508.93	634.24	7,194.69
5	Benton, Vinton	460.82	5,536.41	1,029.89	7,027.12
6	Black Hawk, Cedar Falls	1,638.28	16,709.18	3,052.20	21,399.66
7	Black Hawk, Waterloo	2,806.30	23,675.83	1,935.00	28,417.13
8	Boone, Ogden	-----------	3,101.55	759.99	3,861.54
9	Bremer, Waverly	542.53	14,168.39	800.00	15,510.92
10	Buchanan, Aurora	468.28	1,243.45	278.59	1,990.32
11	Buchanan, Independence	-----------	4,827.35	599.70	5,427.05
12	Buena Vista, Alta	131.30	8,591.64	536.25	9,259.19
13	Butler, Allison	511.24	4,588.98	1,511.69	6,611.91
14	Calhoun, Manson	92.70	5,834.45	1,273.50	7,200.65
15	Calhoun, Rockwell City	111.73	8,594.97	916.79	9,623.49
16	Carroll, Carroll	719.28	6,149.80	2,191.70	9,060.78
17	Cass, Atlantic	1,419.79	12,532.05	764.50	14,716.34
18	Cass, Massena	198.87	3,057.24	556.54	3,812.65
19	Cedar, Tipton	62.34	5,529.60	839.50	6,431.44
20	Cerro Gordo, Mason City	-----------	21,271.57	3,192.79	24,464.36
21	Clayton, Elkader	-----------	3,966.75	2,625.94	6,592.69
22	Clayton, National	313.50	1,789.81	677.39	2,780.70
23	Clayton, Strawberry Point	69.65	4,640.86	369.60	5,080.11
24	Clinton, DeWitt	652.55	10,048.24	1,800.00	12,500.79
25	Crawford, Arion	325.61	2,973.40	278.34	3,577.35
26	Davis, Bloomfield	436.84	10,032.35	673.67	11,142.86
27	Delaware, Manchester	----------	6,320.17	1,326.51	7,646.68
28	Des Moines, Burlington	1,871.9	26,161.35	17,419.32	45,452.59
29	Dickinson, Spirit Lake	----------	3,640.20	579.00	4,219.20
30	Fayette, West Union	2,728.78	9,834.15	639.80	13,202.73
31	Fremont, Tabor	-----------	424.18	252.02	676.20
32	Greene, Jefferson	3,624.45	5,866.85	5,925.33	15,416.63
33	Grundy, Grundy Center	787.11	4,188.86	751.15	5,727.12
34	Guthrie, Guthrie Center	624.05	5,342.65	622.38	6,589.08
35	Hancock, Britt	-----------	5,207.81	912.35	6,120.16
36	Hardin, Eldora	-----------	8,776.11	659.00	9,435.11
37	Harrison, Missouri Valley	598.64	4,225.20	615.18	5,439.02
38	Henry, Mt. Pleasant	277.45	16,279.52	4,442.18	20,999.15
39	Henry, Winfield	4.73	2,314.30	2,029.95	4,348.98
40	Humboldt, Humboldt	-----------	5,734.70	1,551.55	7,286.25
41	Iowa, Williamsburg	-----------	2,740.04	5,432.86	8,172.90
42	Jackson, Maquoketa	312.76	4,027.96	640.28	4,981.00
43	Jasper, Newton	1,029.95	8,473.46	1,676.75	11,180.16
44	Jefferson, Fairfield	-----------	5,802.58	1,082.84	6,885.42
45	Johnson, Iowa City	62.33	4,673.50	1,351.42	6,087.25
46	Jones, Monticello	211.56	6,372.05	486.93	7,070.54
47	Keokuk, What Cheer	2,983.09	5,489.17	603.90	9,076.16
48	Kossuth, Algona	1,909.28	11,634.57	1,570.25	15,114.10
49	Lee, Donnellson	-----------	2,999.60	1,242.93	4,242.53
50	Lee, West Point	38.02	4,285.21	1,742.72	6,065.95
51	Linn, Central City	-----------	6,272.95	1,037.70	7,310.65
52	Linn, Marion	70.00	6,123.69	1,944.62	8,138.31
53	Louisa, Columbus Junction	625.09	9,268.65	3,598.66	13,492.40
54	Lucas, Chariton	-----------	3,799.77	1,213.29	5,013.06
55	Lucas, Derby	120.52	796.67	1,151.12	2,068.31

DISTRICT FAIRS IN IOWA RECEIVING STATE AID 1917.

Disbursements				Balance or Overdraft		Assets and Liabilities		
Expense of fair	Indebtedness of previous years paid	Improvements 1917	Total disbursements	Balance Nov. 1, 1917	Overdraft Nov. 1, 1917	Value of grounds and buildings	Present indebtedness	Number
$ 5,390.31	$----------	$ 733.60	$ 6,123.91	$ 2,282.64	$----------	$ 12,000.00	$----------	1
3,018.99	700.00	1,229.36	4,948.35	----------	1,140.71	5,000.00	1,140.71	2
4,746.91	275.52	183.45	5,205.88	----------	28.38	8,000.00	28.38	3
7,076.20	----------	----------	7,076.20	118.49	----------	15,000.00	----------	4
6,042.05	----------	762.64	6,804.69	222.43	----------	11,000.00	3,000.00	5
15,269.91	4,000.00	1,581.99	20,851.90	547.76	----------	66,361.77	39,050.00	6
18,739.71	7,906.99	----------	26,646.70	1,770.43	----------	43,000.00	2,000.00	7
4,200.46	287.90	----------	4,488.36	----------	626.82	12,000.00	7,649.32	8
12,445.03	2,714.00	263.98	15,423.01	87.91	----------	24,000.00	2,100.00	9
1,242.53	----------	194.53	1,437.06	553.26	----------	1,000.00	----------	10
4,973.00	390.00	50.00	5,413.00	14.05	----------	10,000.00	----------	11
8,137.73	----------	91.00	8,228.73	1,030.46	----------	15,000.00	1,850.00	12
4,159.06	810.27	217.46	5,186.79	1,425.12	----------	10,000.00	500.00	13
5,849.35	----------	----------	5,849.35	1,351.30	----------	7,800.00	1,400.00	14
7,851.64	----------	1,280.38	9,132.02	491.47	----------	16,000.00	2,500.00	15
6,701.35	----------	1,186.01	7,887.36	1,173.42	----------	13,500.00	5,429.80	16
9,580.79	----------	1,758.34	11,339.13	3,377.21	----------	27,000.00	----------	17
2,275.98	----------	297.60	2,573.58	1,239.07	----------	10,000.00	----------	18
4,791.36	50.00	533.58	5,374.94	1,056.50	----------	15,000.00	----------	19
22,119.62	700.00	661.08	23,480.70	983.66	----------	35,579.30	12,237.44	20
5,050.55	1,047.91	----------	6,098.46	494.23	----------	10,000.00	5,700.00	21
2,282.07	180.00	215.00	2,677.07	103.63	----------	5,000.00	3,000.00	22
4,406.00	260.00	100.00	4,766.00	314.11	----------	8,000.00	4,400.00	23
9,160.97	1,500.00	1,682.98	12,343.95	156.84	----------	9,000.00	1,000.00	24
2,969.55	----------	100.00	3,069.55	507.80	----------	3,000.00	----------	25
7,696.05	----------	550.00	8,246.05	2,896.81	----------	16,000.00	----------	26
5,395.56	700.00	762.10	6,857.66	789.02	----------	12,000.00	4,400.00	27
24,075.63	16,500.00	807.77	41,383.40	4,069.19	----------	90,000.00	40,220.00	28
3,850.64	68.94	----------	3,919.58	299.62	----------	13,391.97	6,857.18	29
7,893.57	----------	665.01	8,558.58	4,644.15	----------	21,600.00	----------	30
676.20	----------	----------	676.20	----------	----------	----------	----------	31
5,201.03	6,800.00	1,035.67	13,036.70	2,379.93	----------	17,000.00	5,000.00	32
4,029.58	148.62	1,512.67	5,690.87	36.25	----------	7,000.00	----------	33
5,517.30	----------	925.60	6,442.90	146.18	----------	18,000.00	----------	34
4,311.09	500.00	200.00	5,011.09	1,109.07	----------	16,000.00	3,500.00	35
7,832.71	823.50	618.96	9,275.17	159.94	----------	10,000.00	3,000.00	36
3,738.34	----------	----------	3,738.34	1,700.68	----------	10,000.00	----------	37
13,303.21	600.00	2,774.06	16,677.27	4,321.88	----------	34,000.00	3,000.00	38
4,339.78	----------	----------	4,339.78	9.20	----------	8,000.00	3,621.00	39
6,476.05	----------	545.44	7,021.49	264.76	----------	25,000.00	10,000.00	40
4,644.31	4,016.87	725.80	9,386.98	----------	1,214.08	8,800.00	1,214.08	41
4,079.06	----------	294.99	4,374.05	606.95	----------	13,100.00	3,000.00	42
7,250.55	2,700.00	962.12	10,912.67	267.49	----------	30,000.00	1,500.00	43
6,217.22	656.65	175.00	7,048.87	----------	163.45	12,000.00	1,100.00	44
6,705.08	----------	750.00	7,455.08	----------	1,367.83	22,000.00	11,000.00	45
6,646.39	----------	177.11	6,823.50	247.04	----------	22,000.00	----------	46
5,344.54	----------	333.37	5,677.91	3,398.25	----------	10,000.00	----------	47
10,632.60	2,000.00	2,190.95	14,823.55	290.55	----------	35,000.00	2,000.00	48
3,524.56	500.00	217.97	4,242.53	----------	----------	2,000.00	852.33	49
5,894.89	----------	171.06	6,065.95	----------	----------	8,600.00	5,489.27	50
6,275.23	----------	823.01	7,098.24	212.41	----------	10,000.00	2,400.00	51
6,845.51	426.00	354.68	7,626.19	512.12	----------	12,000.00	7,100.00	52
8,583.72	2,400.00	2,500.00	13,483.72	8.68	----------	14,500.00	4,000.00	53
4,513.64	----------	----------	4,513.64	499.42	----------	----------	600.00	54
1,466.84	----------	----------	1,466.84	601.47	----------	2,930.00	2,230.00	55

TABLE No.

Number	County and City or Town	Balance on hand	Receipts		
			Receipts of fair	Receipts from sources other than fair	Total receipts
56	Lyon, Rock Rapids	3,070.00	15,789.64	778.40	19,638.04
57	Mahaska, New Sharon	-----------	3,514.00	1,223.08	4,737.08
58	Mahaska, Oskaloosa	2,461.94	23,737.26	17,920.00	44,119.20
59	Marion, Knoxville	-----------	8,013.99	22,800.00	30,813.99
60	Marion, Pella	-----------	2,445.96	739.04	3,185.00
61	Marshall, Marshalltown	571.17	16,371.39	2,060.00	19,002.56
62	Marshall, Rhodes	-----------	955.40	344.25	1,299.65
63	Mills, Malvern	90.76	9,378.68	1,616.32	11,085.76
64	Mitchell, Osage	-----------	3,791.65	522.39	4,314.04
65	Monona, Onawa	-----------	3,317.45	430.20	3,747.65
66	Monroe, Albia	1,280.47	8,364.39	848.56	10,493.42
67	Muscatine, West Liberty	1,912.02	11,983.10	841.13	14,736.25
68	Muscatine, Wilton Junction	-----------	2,584.06	611.04	3,195.10
69	O'Brien, Sheldon	-----------	10,517.34	661.70	11,179.04
70	O'Brien, Sutherland	23.77	5,944.94	3,437.62	9,406.33
71	Page, Clarinda	1,314.03	13,156.51	719.52	15,190.06
72	Page, Shenandoah	-----------	12,909.94	3,360.40	16,270.34
73	Pocahontas, Fonda	1,012.87	7,356.00	545.85	8,914.72
74	Pottawattamie, Avoca	30.32	7,338.64	639.84	8,008.80
75	Poweshiek, Grinnell	154.40	8,004.75	4,474.79	12,633.94
76	Poweshiek, Malcom	-----------	2,914.04	1,014.96	3,929.00
77	Sac, Sac City	1,326.57	7,377.44	2,385.37	11,089.38
78	Shelby, Harlan	1,991.24	10,002.79	916.44	12,910.47
79	Sioux, Orange City	107.96	3,191.25	383.58	3,682.79
80	Story, Ames	-----------	2,648.05	4,384.50	7,032.55
81	Tama, Toledo	-----------	8,647.20	773.19	9,420.39
82	Taylor, Bedford	950.00	5,554.75	189.09	6,693.84
83	Union, Creston	-----------	6,595.11	5,684.84	12,279.95
84	Van Buren, Milton	-----------	2,411.50	636.90	3,048.40
85	Wapello, Agency	522.10	387.00	789.58	1,698.68
86	Wapello, Eldon	27.67	4,679.20	1,125.50	5,832.37
87	Warren, Indianola	2,322.50	5,249.64	856.80	8,428.94
88	Wayne, Corydon	144.91	8,971.60	3,109.25	12,225.76
89	Winnebago, Forest City	100.15	5,312.58	2,234.06	7,646.79
90	Winneshiek, Decorah	787.69	12,111.32	398.85	13,297.86
91	Woodbury, Sioux City	-----------	51,603.84	800.00	52,403.84
92	Worth, Northwood	1,013.47	2,129.82	347.05	3,490.34
93	Wright, Clarion	-----------	6,682.90	419.13	7,102.03
	Totals 1917	$ 51,620.20	$708,390.45	$182,706.77	$942,717.42
	Totals for 1916	$ 48,355.73	$646,473.74	$194,738.86	$889,568.33
	Totals for 1915	$ 36,480.71	$516,849.17	$188,684.12	$742,014.00

1—Continued

Disbursements				Balance or Overdraft		Assets and Liabilities		
Expense of fair	Indebtedness of previous years paid	Improvements 1917	Total disbursements	Balance Nov. 1, 1917	Overdraft Nov. 1, 1917	Value of grounds and buildings	Present indebtedness	Number
12,872.84	-----------	2,001.24	14,874.08	4,763.96	-----------	25,000.00	-----------	56
3,426.80	-----------	1,306.20	4,733.00	4.08	-----------	13,000.00	-----------	57
18,617.09	3,700.00	20,419.72	42,736.81	1,382.39	-----------	60,000.00	3,000.00	58
8,736.70	-----------	22,000.00	30,736.70	77.29	-----------	35,000.00	22,000.00	59
2,970.01	161.17	-----------	3,131.18	53.82	-----------	10,000.00	3,650.00	60
14,699.95	1,761.00	145.27	16,606.22	2,396.34	-----------	30,000.00	-----------	61
1,462.06	-----------	-----------	1,462.06	-----------	162.41	1,500.00	162.41	62
6,023.70	2,462.19	500.00	8,985.89	2,099.87	-----------	15,000.00	10,000.00	63
3,971.86	28.28	-----------	4,000.14	313.90	-----------	6,000.00	2,500.00	64
3,438.18	15.67	420.35	3,874.20	-----------	126.55	14,000.00	4,300.00	65
7,540.55	-----------	458.08	7,998.63	2,494.79	-----------	4,800.00	-----------	66
9,204.39	-----------	234.57	9,438.96	5,297.29	-----------	16,000.00	-----------	67
3,861.14	-----------	-----------	3,861.14	-----------	666.04	3,500.00	712.67	68
9,490.32	-----------	781.29	10,271.61	907.43	-----------	15,000.00	900.00	69
3,505.87	2,498.30	953.32	6,957.49	2,448.84	-----------	7,500.00	3,100.00	70
12,712.94	-----------	110.95	12,823.89	2,366.17	-----------	7,619.95	-----------	71
8,579.81	3,535.04	3,497.05	15,611.90	658.44	-----------	18,000.00	4,179.25	72
6,963.87	-----------	400.00	7,363.87	1,550.85	-----------	12,000.00	-----------	73
5,865.95	1,000.00	115.00	6,980.95	1,027.85	-----------	10,000.00	2,000.00	74
8,452.28	1,891.97	1,400.79	11,745.04	888.90	-----------	19,500.00	7,450.00	75
3,876.23	-----------	-----------	3,876.23	52.77	-----------	10,000.00	900.00	76
8,788.20	-----------	1,129.34	9,917.54	1,171.84	-----------	20,000.00	-----------	77
7,748.15	-----------	989.00	8,737.15	4,173.32	-----------	27,000.00	-----------	78
2,716.90	-----------	123.30	2,840.20	842.59	-----------	6,000.00	1,400.00	79
2,891.40	2,423.27	1,331.56	6,646.23	386.32	-----------	4,500.00	3,500.00	80
7,772.90	-----------	537.34	8,310.24	1,110.15	-----------	25,000.00	11,000.00	81
5,790.08	-----------	100.00	5,890.08	803.76	-----------	6,000.00	-----------	82
7,116.03	-----------	642.80	7,758.83	4,521.12	-----------	18,000.00	-----------	83
3,249.50	-----------	-----------	3,249.50	-----------	201.10	2,000.00	4,250.00	84
1,691.10	-----------	-----------	1,691.10	7.58	-----------	-----------	-----------	85
5,236.57	-----------	119.50	5,356.07	476.30	-----------	6,000.00	5,170.00	86
6,273.39	1,502.50	-----------	7,775.89	653.05	-----------	25,000.00	-----------	87
9,296.02	1,793.96	532.17	11,622.15	603.61	-----------	20,000.00	3,000.00	88
6,377.48	-----------	573.83	6,951.31	695.48	-----------	14,000.00	4,500.00	89
7,532.44	-----------	980.14	8,512.58	4,785.28	-----------	10,000.00	-----------	90
33,274.51	2,268.52	1,133.38	36,676.41	15,727.43	-----------	200,000.00	-----------	91
2,047.54	-----------	332.44	2,379.98	1,110.36	-----------	6,000.00	-----------	92
6,122.06	887.86	-----------	7,009.92	92.11	-----------	13,000.00	8,000.00	93
$651,638.81	$ 85,592.90	$ 96,464.95	$833.696.66	$114,718.13	$ 5,697.37	$ 1,629,082.99	$320,743.84	
$626,870.14	$ 71,687.90	$138,269.99	$836,828.03	$ 74,341.91	$ 21,601.61	$ 1,588,885.00	$261,155.40	
$521,597.90	$ 39,156.93	$102,102.92	$688,291.21	$ 63,491.98	$ 9,769.19	$ 988,128.44	$267,299.26	

TABLE NO. 2—RECEIPTS AND DISBURSEMENTS OF

Number	County and City or Town	Receipts				
		Ticket Sales				
		Outside gates	Grand stand	Entry fees speed department	Concessions and privileges	Miscellaneous receipts of fair
1	Adair, Greenfield	$ 4,805.05	$ 227.40	$ 585.0	$ 620.35	$----------
2	Adams, Corning	2,349.70	299.40	----------	290.00	170.00
3	Allamakee, Waukon	3,229.57	189.65	614.0	616.49	----------
4	Audubon, Audubon	4,296.70	855.45	640.0	590.00	126.78
5	Benton, Vinton	3,135.08	596.10	225.0	933.75	646.48
6	Black Hawk, Cedar Falls	8,383.50	4,285.90	550.0	2,345.53	1,144.25
7	Black Hawk, Waterloo	12,362.95	911.80	----------	8,798.40	1,602.68
8	Boone, Ogden	2,127.65	207.10	206.25	340.55	220.00
9	Bremer, Waverly	9,123.95	1,761.45	15.00	1,824.27	1,443.72
10	Buchanan, Aurora	716.25	----------	34.00	70.00	423.20
11	Buchanan, Independence	3,154.70	375.65	161.00	393.50	742.50
12	Buena Vista, Alta	6,022.55	586.50	849.00	698.50	435.09
13	Butler, Allison	3,545.35	388.95	94.75	401.65	158.28
14	Calhoun, Manson	4,862.65	307.80	52.50	534.00	77.50
15	Calhoun, Rockwell City	4,765.25	636.75	1,279.00	982.50	931.47
16	Carroll, Carroll	3,627.90	389.00	379.00	856.90	897.00
17	Cass, Atlantic	8,841.25	1,098.00	528.00	1,143.70	921.10
18	Cass, Massena	2,566.00	101.09	15.00	375.15	----------
19	Cedar, Tipton	3,537.80	751.85	560.00	411.50	268.45
20	Cerro Gordo, Mason City	11,367.67	5,714.36	780.00	3,052.79	356.75
21	Clayton, Elkader	2,715.30	606.00	37.50	468.45	139.50
22	Clayton, National	1,249.71	84.60	----------	80.00	375.50
23	Clayton, Strawberry Point	2,730.35	457.40	582.50	497.50	373.11
24	Clinton, DeWitt	5,900.05	1,382.25	396.00	896.50	1,473.44
25	Crawford, Arion	2,178.40	187.50	290.25	244.40	72.85
26	Davis, Bloomfield	5,267.82	1,300.50	829.00	659.0	1,976.03
27	Delaware, Manchester	3,882.40	1,110.25	275.00	674.2	378.25
28	Des Moines, Burlington	14,094.50	6,289.50	1,250.00	3,130.0	1,397.35
29	Dickinson, Spirit Lake	2,500.25	210.60	----------	277.35	652.00
30	Fayette, West Union	6,556.60	782.00	629.50	1,562.05	304.00
31	Fremont, Tabor	115.00	----------	----------	----------	309.18
32	Greene, Jefferson	3,889.10	894.00	48.75	644.50	390.50
33	Grundy, Grundy Center	2,945.36	208.95	172.50	659.15	202.90
34	Guthrie, Guthrie Center	3,853.35	----------	149.50	1,143.05	196.75
35	Hancock, Britt	2,612.12	460.75	210.00	697.55	1,227.39
36	Hardin, Eldora	5,522.75	792.95	820.00	1,028.66	611.75
37	Harrison, Missouri Valley	3,420.30	250.80	----------	398.70	155.40
38	Henry, Mt. Pleasant	8,542.45	2,147.00	2,509.00	1,460.00	1,621.07
39	Henry, Winifield	1,067.25	175.45	740.00	55.00	276.60
40	Humboldt, Humboldt	3,787.10	1,023.85	415.00	423.00	85.75
41	Iowa, Williamsburg	2,074.84	336.20	----------	264.00	65.00
42	Jackson, Maquoketa	2,371.70	484.50	265.00	388.56	518.20
43	Jasper, Newton	5,657.15	1,507.00	250.00	689.00	370.31
44	Jefferson, Fairfield	3,073.44	273.25	1,774.00	475.14	206.75
45	Johnson, Iowa City	3,613.85	360.65	----------	699.00	----------
46	Jones, Monticello	3,670.70	1,102.25	465.00	597.30	536.80
47	Keokuk, What Cheer	3,192.25	550.50	1,105.00	415.97	225.45
48	Kossuth, Algona	8,412.42	916.35	270.00	1,430.55	605.25
49	Lee, Donnellson	1,758.75	----------	699.00	208.75	333.10
50	Lee, West Point	1,641.17	----------	1,359.00	378.00	907.04
51	Linn, Central City	3,542.20	1,431.50	----------	613.90	685.35
52	Linn, Marion	3,375.59	1,260.00	----------	547.00	941.10
53	Louisa, Columbus Junction	5,674.80	851.40	770.00	681.75	1,290.70
54	Lucas, Chariton	2,817.90	----------	----------	506.75	475.12

COUNTY AND DISTRICT FAIRS OF IOWA 1917.

		Disbursements							
State aid	Total receipts of fair	Premiums other than for speed	Speed premiums	Music and attractions	Miscellaneous expense of fair	Total disbursements	Profit or loss	(+) Profit (—) Loss	Number
$ 657.42	$ 6,895.22	$ 1,287.11	$ 975.00	$ 1,195.00	$ 1,933.20	$ 5,390.31	$ 1,504.91	+	1
401.04	3,510.14	668.40	785.00	1,102.20	463.39	3,018.99	491.15	+	2
527.79	5,177.50	879.65	1,500.00	675.00	1,692.26	4,746.91	430.59	+	3
634.24	7,143.17	1,171.20	2,875.00	1,165.00	1,865.00	7,076.20	66.97	+	4
529.89	6,066.30	883.15	1,360.00	1,553.02	2,245.88	6,042.05	24.25	+	5
800.00	17,509.18	3,146.24	1,945.00	6,315.78	3,862.89	15,269.91	2,239.27	+	6
800.00	24,475.83	4,869.00	-----------	4,094.55	9,776.16	18,739.71	5,736.12	+	7
532.14	3,633.69	886.90	1,087.50	1,045.00	1,181.06	4,200.46	566.77	—	8
800.00	14,968.39	2,387.47	1,741.26	2,229.34	6,086.96	12,445.03	2,523.36	+	9
276.09	1,519.54	460.15	124.00	204.25	454.13	1,242.53	277.01	+	10
599.70	5,427.05	999.50	1,475.00	900.00	1,598.50	4,973.00	454.05	+	11
536.25	9,127.89	893.75	2,670.25	2,467.85	2,105.88	8,137.73	990.16	+	12
441.69	5,030.67	736.15	205.24	1,536.25	1,681.42	4,159.06	871.61	+	13
738.61	6,573.06	1,693.05	315.50	2,564.50	1,276.30	5,849.35	723.71	+	14
716.79	9,311.76	1,583.95	2,822.50	1,800.00	1,645.19	7,851.64	1,460.12	+	15
202.80	6,352.60	338.00	2,175.50	694.70	3,493.15	6,701.35	348.75	—	16
764.50	13,296.55	1,822.50	2,759.00	1,605.00	3,394.29	9,580.79	3,715.76	+	17
246.54	3,303.78	410.90	775.75	635.00	454.33	2,275.98	1,027.80	+	18
689.50	6,219.10	1,447.50	1,405.00	615.00	1,323.86	4,791.36	1,427.74	+	19
800.00	22,071.57	4,851.20	1,940.00	7,350.35	7,978.07	22,119.62	48.05	—	20
625.94	4,592.69	1,129.70	507.50	1,817.50	1,595.85	5,050.55	457.86	—	21
477.39	2,267.20	795.65	-----------	500.00	986.42	2,282.07	14.87	—	22
369.60	5,010.46	616.00	1,300.00	1,400.00	1,090.00	4,406.00	604.46	+	23
800.00	10,848.24	2,207.40	1,880.00	650.00	4,423.57	9,160.97	1,687.27	+	24
278.34	3,251.74	463.90	1,180.00	450.00	875.65	2,969.55	282.19	+	25
673.67	10,706.02	1,368.35	2,050.00	1,225.00	3,052.70	7,696.05	3,009.97	+	26
626.51	6,946.68	1,132.55	1,136.05	1,809.00	1,317.96	5,395.56	1,551.12	+	27
800.00	26,961.35	8,189.00	5,156.20	3,373.75	7,356.68	24,075.63	2,885.72	+	28
579.00	4,219.20	965.00	400.53	1,185.00	1,300.11	3,850.64	368.56	+	29
639.80	10,473.95	1,199.00	1,490.00	2,886.00	2,318.57	7,893.57	2,580.38	+	30
190.74	614.92	317.90	-----------	-----------	358.30	676.20	61.28	—	31
525.33	6,392.18	875.55	535.50	1,230.44	2,559.54	5,201.03	1,191.15	+	32
601.15	4,790.01	1,005.75	905.00	1,035.00	1,083.83	4,029.58	760.43	+	33
622.38	5,965.03	1,111.90	1,611.50	1,662.90	1,131.00	5,517.30	447.73	+	34
412.35	5,620.16	687.25	1,135.00	1,355.00	1,133.84	4,311.09	1,309.07	+	35
659.00	9,435.11	1,295.00	2,440.00	2,011.50	2,086.21	7,832.71	1,602.40	+	36
615.18	4,840.38	1,075.90	-----------	1,160.00	1,502.44	3,738.34	1,102.04	+	37
800.00	17,079.52	3,273.85	4,700.00	2,175.00	3,154.36	13,303.21	3,776.31	+	38
454.95	2,769.25	758.25	1,800.00	625.00	1,156.53	4,339.78	1,570.53	—	39
748.63	6,483.33	1,743.15	1,642.00	1,869.00	1,221.90	6,476.05	7.28	+	40
592.86	3,332.90	988.11	705.00	2,051.20	900.00	4,644.31	1,311.41	—	41
640.28	4,668.24	1,202.40	1,220.00	687.00	969.66	4,079.06	589.18	+	42
676.75	9,150.21	1,383.76	1,420.00	2,090.95	2,355.84	7,250.55	1,899.66	+	43
432.84	6,235.42	721.40	3,450.00	961.55	1,084.27	6,217.22	18.20	+	44
601.42	5,274.92	1,007.08	273.00	2,525.00	2,900.00	6,705.08	1,430.16	—	45
486.93	6,858.98	811.55	1,200.00	2,527.66	2,107.18	6,646.39	212.59	+	46
603.90	6,093.07	1,019.50	2,575.00	1,050.00	700.04	5,344.54	748.53	+	47
770.25	12,404.82	1,851.25	1,355.10	1,820.00	5,606.25	10,632.60	1,772.22	+	48
390.60	3,390.20	651.0	1,770.00	370.00	732.96	3,524.56	134.36	—	49
603.45	4,888.66	1,017.2	2,540.00	605.50	1,732.14	5,894.89	1,006.23	—	50
662.7	6,935.65	1,313.5	-----------	2,582.00	2,379.73	6,275.23	660.4	+	51
732.1	6,855.83	1,660.7	-----------	3,143.49	2,041.30	6,845.51	10.3	+	52
698.6	9,967.31	1,493.3	2,120.00	1,954.22	3,016.20	8,583.72	1,383.5	+	53
613.2	4,413.06	1,066.4	-----------	1,959.40	1,487.79	4,513.64	100.5	—	54

TABLE No

Number	County and City or Town	Receipts				
		Ticket Sales				
		Outside gates	Grand stand	Entry fees speed department	Concessions and privileges	Miscellaneous receipts of fair
55	Lucas, Derby	768.11	----------	----------	22.00	6.56
56	Lyon, Rock Rapids	9,089.35	2,060.50	1,115.00	2,774.89	749.90
57	Mahaska, New Sharon	1,584.00	800.00	500.00	300.00	330.00
58	Mahaska, Oskaloosa	14,103.20	5,300.55	1,159.86	1,576.26	1,597.39
59	Marion, Knoxville	5,209.50	1,212.00	450.00	721.00	421.49
60	Marion, Pella	1,614.36	165.40	153.00	71.00	442.20
61	Marshall, Marshalltown	11,059.25	1,992.95	780.61	2,202.78	335.80
62	Marshall, Rhodes	767.05	----------	----------	80.50	107.85
63	Mills, Malvern	5,345.83	2,375.00	699.00	617.35	341.50
64	Mitchell, Osage	2,976.30	377.10	92.50	345.75	----------
65	Monona, Onawa	1,610.95	544.25	69.00	173.00	920.25
66	Monroe, Albia	5,593.95	843.35	535.50	604.64	786.95
67	Muscatine, West Liberty	8,273.25	1,299.00	895.00	746.00	769.85
68	Muscatine, Wilton Junction	1,725.51	221.70	138.00	108.00	390.85
69	O'Brien, Sheldon	5,877.75	740.40	1,947.50	849.30	1,102.39
70	O'Brien, Sutherland	4,813.85	256.75	----------	189.00	685.34
71	Page, Clarinda	8,316.47	1,319.50	360.00	1,308.65	1,851.89
72	Page, Shenandoah	9,420.85	449.35	455.25	1,742.17	842.32
73	Pocahontas, Fonda	2,950.00	300.00	2,360.00	1,050.50	695.50
74	Pottawattamie, Avoca	3,930.62	1,199.10	460.00	765.17	983.75
75	Poweshiek, Grinnell	4,025.10	1,566.25	583.76	1,031.61	798.03
76	Poweshiek, Malcom	1,144.00	417.1	692.00	301.00	359.87
77	Sac, Sac City	4,663.25	843.2	610.00	1,164.50	96.44
78	Shelby, Harlan	5,581.40	1,685.0	560.00	1,155.10	1,021.24
79	Sioux, Orange City	2,231.00	242.4	173.70	130.00	414.10
80	Story, Ames	1,475.35	----------	----------	141.20	1,031.50
81	Tama, Toledo	5,581.80	1,023.00	585.00	667.20	790.20
82	Taylor, Bedford	3,175.15	490.10	1,143.75	526.00	219.75
83	Union, Creston	4,532.19	849.50	292.50	496.37	424.55
84	Van Buren, Milton	1,441.80	193.95	175.00	101.00	499.75
85	Wapello, Agency	221.40	----------	----------	48.50	117.10
86	Wapello, Eldon	2,602.60	391.00	1,022.25	521.65	141.70
87	Warren, Indianola	3,568.34	798.55	175.25	514.35	193.15
88	Wayne, Corydon	3,813.60	989.00	482.00	818.40	286.60
89	Winnebago, Forest City	3,385.22	900.00	----------	612.15	412.21
90	Winneshiek, Decorah	8,806.19	885.00	360.00	1,305.78	754.35
91	Woodbury, Sioux City	31,838.50	7,459.00	935.50	5,577.56	5,793.28
92	Worth, Northwood	1,345.50	102.40	140.00	143.37	398.55
93	Wright, Clarion	4,191.50	533.40	1,200.00	601.00	157.00
	Totals 1917	$435,182.48	$ 87,948.12	$45,179.93	$80,282.03	$59,797.89
	Totals for 1916	$382,555.23	$ 77,470.19	$47,204.11	$71,984.26	$67,259.95
	Totals for 1915	$308,720.82	$ 56,650.00	$37,242.95	$58,592.11	$55.643.78

2—Continued

		Disbursements							
State aid	Total receipts of fair	Premiums other than for speed	Speed premiums	Music and attractions	Miscellaneous expense of fair	Total disbursements	Profit or loss	(+) Profit (—) Loss	Number
531.12	1,327.7	885.20	----------	186.30	395.34	1,466.84	139.05	—	55
778.40	16,568.0	1,892.00	4,001.7	2,600.00	4,379.06	12,872.84	3,695.20	+	56
523.08	4,037.0	871.80	730.0	1,425.00	400.00	3,426.80	610.28	+	57
800.00	24,537.2	4,738.25	3,468.7	3,621.00	6,789.09	18,617.09	5,920.17	+	58
800.00	8,813.9	2,728.60	2,104.9	1,850.00	2,053.15	8,736.70	77.29	+	59
389.04	2,835.00	648.40	481.2	960.00	880.36	2,970.01	135.01	—	60
800.00	17,171.39	4,240.85	3,082.5	2,300.00	5,076.60	14,699.95	2,471.44	+	61
344.25	1,299.65	573.75	----------	553.00	335.31	1,462.06	162.41	—	62
626.75	10,005.43	1,133.75	1,780.0	1,950.00	1,159.95	6,023.70	3,981.73	+	63
522.39	4,314.04	870.65	637.50	1,365.00	1,098.71	3,971.86	342.18	+	64
430.20	3,747.65	717.00	744.50	878.70	1,097.98	3,438.18	309.47	+	65
798.56	9,162.95	1,992.80	2,278.50	500.00	2,769.25	7,540.55	1,622.40	+	66
800.00	12,783.10	2,648.50	2,675.00	2,039.98	1,840.91	9,204.39	3,578.71	+	67
611.04	3,195.10	1,055.20	1,375.00	325.00	1,105.94	3,861.14	666.04	—	68
661.70	11,179.04	1,308.50	4,150.00	1,600.00	2,431.82	9,490.32	1,688.73	+	69
337.62	6,282.56	562.70	629.25	1,419.00	894.92	3,505.87	2,776.69	+	70
719.52	13,876.03	1,597.60	1,990.00	4,652.00	4,473.34	12,712.94	1,163.09	+	71
660.40	13,570.34	1,302.00	1,691.50	2,198.44	3,387.87	8,579.81	4,990.53	+	72
545.85	7,901.85	909.75	3,375.00	1,200.00	1,479.12	6,963.87	937.98	+	73
639.84	7,978.48	1,319.92	3,053.00	600.00	893.03	5,865.95	2,112.53	+	74
725.50	8,730.25	1,627.50	2,163.80	2,571.55	2,089.43	8,452.28	277.97	+	75
463.11	3,377.15	771.85	1,470.00	505.95	1,128.43	3,876.23	499.08	—	76
699.84	8,077.28	1,499.20	2,987.86	2,600.00	1,701.14	8,788.20	710.92	—	77
666.44	10,669.23	1,332.20	2,300.00	2,064.95	2,051.00	7,748.15	2,921.08	+	78
383.58	3,574.83	639.30	550.00	725.00	802.60	2,716.90	857.93	+	79
634.50	3,282.55	1,172.50	----------	550.00	1,168.90	2,891.40	391.1	+	80
773.19	9,420.39	1,865.95	1,825.00	1,895.00	2,186.95	7,772.90	1,647.4	+	81
189.09	5,743.84	315.15	2,550.00	1,720.00	1,204.93	5,790.08	46.2	—	82
429.84	7,024.95	716.40	1,236.25	3,165.22	1,998.16	7,116.03	91.0	—	83
636.90	3,048.40	1,184.50	1,365.00	----------	700.00	3,249.50	201.1	—	84
658.08	1,045.08	1,290.40	----------	----------	400.70	1,691.10	646.0	—	85
475.50	5,154.70	792.50	2,307.50	1,035.00	1,101.57	5,236.57	81.87	—	86
716.80	5,966.44	1,584.00	1,747.75	1,200.00	1,741.64	6,273.39	306.95	—	87
800.00	9,771.60	2,195.55	3,064.75	1,590.60	2,445.12	9,296.02	475.58	+	88
579.06	5,891.64	965.10	----------	3,700.45	1,711.93	6,377.48	485.84	—	89
398.85	12,510.17	664.75	960.00	3,427.92	2,479.77	7,532.44	4,977.73	+	90
800.00	52,403.84	7,521.35	4,816.00	6,325.00	14,612.16	33,274.51	19,129.33	+	91
347.05	2,476.87	578.42	500.00	470.00	499.12	2,047.54	429.33	+	92
419.13	7,102.03	698.55	2,833.20	1,175.00	1,415.31	6,122.06	979.97	+	93
$54,817.24	$763.207.69	$137,226.48	$148,359.47	$159,441.51	$206,611.35	$651,638.81	$122,791.34 11,222.46	+ —	
$56,870.67	$703,344.41	$144,703.25	$149,285.42	$151,242.79	$181,638.68	$626,870.14	$ 93,132.24 $ 16,657.97	+ —	
$48,085.98	$564,935.64	$117,439.10	$127,951.22	$115,227.34	$160,982.24	$521,599.90	$ 62,230.80 $ 18,895.06	+ —	

TABLE NO. 3—TOTAL NUMBER OF EXHIBITORS, NUMBER HORSES, CATTLE, SHEEP, SWINE AND POULTRY ON EXHIBITION

Number	County and City or Town	Number of exhibitors	Number of exhibitors live stock department	Horses		Cattle	
				No. exhibited	Premiums paid	No. exhibited	Premiums paid
1	Adair, Greenfield	210	48	70	$ 215.63	52	$ 159.37
2	Adams, Corning	116	27	30	77.40	18	86.40
3	Allamakee, Waukon	375	62	41	140.00	43	208.00
4	Audubon, Audubon	210	130	58	220.50	72	327.00
5	Benton, Vinton	122	31	68	289.00	78	355.00
6	Black Hawk, Cedar Falls	516	66	150	578.52	266	948.00
7	Black Hawk, Waterloo	685	43	------	----------	489	4,674.00
8	Boone, Ogden	135	11	27	234.00	24	259.00
9	Bremer, Waverly	920	74	84	442.00	242	732.65
10	Buchanan, Aurora	211	35	24	56.00	13	47.00
11	Buchanan, Independence	42	25	56	338.50	70	237.50
12	Buena Vista, Alta	109	28	39	161.00	35	142.50
13	Butler, Allison	335	40	44	101.70	68	141.10
14	Calhoun, Manson	237	19	71	305.25	53	286.50
15	Calhoun, Rockwell City	215	65	80	314.00	65	505.00
16	Carroll, Carroll	51	5	8	----------	52	240.00
17	Cass, Atlantic	285	136	111	496.50	66	277.50
18	Cass, Massena	133	33	19	64.80	36	113.60
19	Cedar, Tipton	830	37	59	420.50	56	312.00
20	Cerro Gordo, Mason City	1,765	92	211	908.00	183	1,073.00
21	Clayton, Elkader	137	32	30	166.50	47	286.00
22	Clayton, National	86	18	44	152.00	24	59.00
23	Clayton, Strawberry Point	226	31	17	92.00	------	----------
24	Clinton, DeWitt	744	43	34	321.00	52	369.00
25	Crawford, Arion	91	33	19	63.75	12	53.00
26	Davis, Bloomfield	245	61	47	454.00	39	223.50
27	Delaware, Manchester	111	58	73	284.00	111	408.00
28	Des Moines, Burlington	608	73	220	4,340.00	130	1,087.00
29	Dickinson, Spirit Lake	159	23	20	87.50	44	112.50
30	Fayette, West Union	403	82	131	266.50	39	74.00
31	Fremont, Tabor	118	40	53	58.00	27	32.00
32	Greene, Jefferson	203	44	58	217.00	35	112.00
33	Grundy, Grundy Center	346	35	65	159.50	61	322.00
34	Guthrie, Guthrie Center	202	92	47	143.09	52	189.22
35	Hancock, Britt	98	34	18	116.00	42	158.50
36	Hardin, Eldora	236	15	84	211.00	34	223.00
37	Harrison, Missouri Valley	127	31	33	164.00	82	462.00
38	Henry, Mt. Pleasant	506	55	153	559.00	141	845.50
39	Henry, Winfield	64	26	71	292.00	9	66.00
40	Humboldt, Humboldt	132	85	32	335.00	65	282.00
41	Iowa, Williamsburg	------	------	------	167.26	------	324.00
42	Jackson, Maquoketa	204	51	78	220.60	82	279.70
43	Jasper, Newton	208	23	42	160.50	38	118.00
44	Jefferson, Fairfield	76	18	57	240.00	1	8.00
45	Johnson, Iowa City	159	30	21	201.00	22	315.00
46	Jones, Monticello	207	20	61	235.75	26	91.00
47	Keokuk, What Cheer	74	31	24	149.00	58	208.50
48	Kossuth, Algona	425	97	74	237.50	122	513.00
49	Lee, Donnellson	71	17	32	175.50	6	39.00
50	Lee, West Point	49	7	16	364.00	35	285.00
51	Linn, Central City	200	45	95	264.00	125	455.00
52	Linn, Marion	307	103	64	276.50	78	521.98
53	Louisa, Columbus Junction	202	22	33	198.70	20	68.00
54	Lucas, Chariton	153	52	39	207.00	23	169.00

EXHIBITORS IN LIVE STOCK DEPARTMENT, NUMBER AND AMOUNT OF PREMIUMS PAID IN EACH DIVISION.

Swine		Sheep		Poultry						
No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid	Premiums paid agricultural department	Premiums paid pantry and kitchen department	Premiums paid fine arts department	Premiums paid all other departments	Number
136	$ 171.00	26	$ 37.75	------	$ 37.63	$ 61.71	$ 48.50	$ 104.13	$ 451.39	1
93	138.60	41	77.40	105	60.30	65.48	40.05	26.78	95.99	2
35	78.00	23	82.00	128	24.00	93.25	113.40	141.00	----------	3
300	206.50	------	----------	160	43.10	120.80	103.60	42.40	107.30	4
30	29.00	12	16.50	24	8.15	70.05	21.70	63.00	30.75	5
114	258.02	160	323.10	130	62.60	140.75	62.00	117.25	656.00	6
------	----------	------	----------	------	----------	195.00	----------	----------	----------	7
5	64.00	------	----------	60	48.50	27.25	71.70	30.75	151.70	8
342	180.00	37	63.50	320	55.50	114.40	88.25	184.90	526.27	9
46	75.00	12	22.50	113	87.00	110.00	12.00	45.65	5.00	10
58	69.00	11	20.00	------	----------	32.25	----------	----------	302.25	11
46	104.00	29	15.75	55	20.00	37.50	64.25	142.25	206.50	12
60	109.69	11	15.00	225	85.40	71.21	24.30	90.75	97.00	13
84	225.50	7	12.00	237	151.50	104.05	120.00	66.60	421.65	14
95	260.00	20	80.00	110	84.00	103.75	76.25	36.00	124.95	15
10	25.00	------	----------	4	----------	----------	73.00	----------	----------	16
276	337.00	57	163.50	294	90.00	155.50	83.50	109.25	109.75	17
91	106.65	54	56.80	72	13.00	30.00	26.05	----------	----------	18
37	71.50	39	119.00	119	44.25	133.00	110.25	141.20	95.80	19
152	497.50	114	617.00	193	57.25	336.60	142.55	379.90	839.40	20
72	240.00	16	38.00	44	35.50	113.10	77.75	172.85	----------	21
31	81.00	25	34.00	27	9.00	99.55	69.55	50.25	241.30	22
25	79.50	6	22.00	45	26.00	100.75	78.50	134.50	82.75	23
161	365.00	36	82.00	244	118.00	149.00	140.00	438.00	225.40	24
50	80.00	3	11.00	30	8.00	75.50	55.40	----------	117.25	25
53	155.50	27	116.00	125	77.55	93.00	74.00	134.00	40.80	26
68	212.00	18	29.50	34	34.00	67.05	98.00	----------	----------	27
167	536.50	42	275.00	739	514.50	615.50	155.50	205.30	459.70	28
46	49.00	35	60.00	------	----------	173.25	31.00	39.75	412.00	29
117	178.50	28	35.00	156	43.50	152.50	64.10	120.25	264.65	30
64	49.00	6	12.00	------	----------	84.50	47.90	31.50	----------	31
101	249.00	30	47.00	126	46.00	37.55	56.50	79.50	31.00	32
78	107.50	11	24.00	300	39.25	29.75	69.00	122.75	132.00	33
277	267.63	31	21.93	------	33.77	177.26	113.00	166.00	----------	34
108	144.50	18	26.00	76	28.75	52.25	82.50	62.25	16.50	35
120	141.00	45	120.00	170	53.25	104.95	58.55	133.50	249.75	36
64	108.00	8	10.00	154	82.50	93.00	80.75	75.65	----------	37
164	554.00	119	266.00	511	221.00	264.25	91.60	362.50	110.00	38
37	71.00	13	34.00	62	33.00	28.50	66.75	105.50	61.50	39
72	267.00	1	5.00	157	92.95	106.25	126.45	80.50	448.00	40
------	52.20	------	17.10	------	112.05	62.36	45.19	183.88	24.07	41
98	160.50	48	97.30	120	42.70	98.30	106.10	197.20	----------	42
151	290.50	44	47.50	320	116.25	86.65	86.75	146.00	331.61	43
50	67.00	20	26.50	30	12.00	52.00	53.10	172.80	90.00	44
18	122.00	11	64.00	30	17.75	4.50	40.50	111.50	130.83	45
------	----------	------	----------	78	16.75	89.25	98.50	123.00	157.30	46
89	270.00	15	27.50	209	93.00	52.00	69.00	96.50	54.00	47
250	272.00	------	----------	350	52.50	196.00	121.25	120.00	339.00	48
4	13.00	26	57.50	32	12.00	215.25	84.25	54.50	----------	49
20	67.00	12	33.00	80	66.50	40.75	28.00	95.75	37.25	50
55	101.00	25	35.00	145	37.00	83.50	55.00	112.25	170.75	51
104	212.00	16	36.00	159	47.25	333.40	70.22	112.37	51.00	52
74	300.00	12	36.00	600	324.40	69.25	290.00	206.95	----------	53
36	68.00	61	68.00	108	56.70	79.50	66.00	108.00	244.25	54

TABLE No.

Number	County and City or Town	Number of Exhibitors	Number of exhibitors live stock department	Horses		Cattle	
				No. exhibited	Premiums paid	No. exhibited	Premiums paid
55	Lucas, Derby	239	61	67	208.00	34	119.50
56	Lyon, Rock Rapids	202	48	50	411.00	96	670.50
57	Mahaska, New Sharon	244	80	46	169.50	24	90.50
58	Mahaska, Oskaloosa	733	132	169	1,099.00	90	952.00
59	Marion, Knoxville	539	125	77	400.00	57	387.00
60	Marion, Pella	237	25	64	251.50	3	25.00
61	Marshall, Marshalltown	1,021	85	163	610.00	151	1,049.00
62	Marshall, Rhodes	188	33	30	79.00	52	109.00
63	Mills, Malvern	91	43	65	304.00	35	200.00
64	Mitchell, Osage	108	26	------	116.00	------	340.00
65	Monona, Onawa	74	16	17	95.00	27	148.00
66	Monroe, Albia	515	67	124	537.70	33	164.20
67	Muscatine, West Liberty	290	66	100	622.50	95	535.00
68	Muscatine, Wilton Junction	181	32	46	230.00	63	208.00
69	O'Brien, Sheldon	243	60	72	400.00	67	433.50
70	O'Brien, Sutherland	148	29	34	122.50	29	144.00
71	Page, Clarinda	134	27	111	546.25	32	216.00
72	Page, Shenandoah	225	25	35	378.50	25	183.00
73	Pocahontas, Fonda	225	40	63	125.00	40	100.00
74	Pottawattamie, Avoca	116	50	10	47.85	49	824.40
75	Poweshiek, Grinnell	130	30	55	220.00	12	72.00
76	Poweshiek, Malcom	116	16	21	105.00	45	256.00
77	Sac, Sac City	125	27	39	335.00	44	481.30
78	Shelby, Harlan	125	55	85	381.75	65	359.00
79	Sioux, Orange City	113	44	90	202.00	37	203.00
80	Story, Ames	372	60	140	451.00	40	164.00
81	Tama, Toledo	290	65	60	194.50	81	567.50
82	Taylor, Bedford	51	5	------	----------	15	69.00
83	Union, Creston	153	31	52	239.00	33	97.00
84	Van Buren, Milton	60	20	35	575.00	27	175.00
85	Wapello, Agency	187	47	44	166.30	37	246.30
86	Wapello, Eldon	82	29	25	163.50	30	188.00
87	Warren, Indianola	169	34	98	352.50	69	294.50
88	Wayne, Corydon	321	59	75	494.50	124	586.00
89	Winnebago, Forest City	95	24	40	196.50	46	271.25
90	Winneshiek, Decorah	95	29	11	39.00	------	----------
91	Woodbury, Sioux City	928	328	156	940.00	238	2,931.00
92	Worth, Northwood	250	31	21	88.63	45	95.16
93	Wright, Clarion	124	21	27	108.50	36	153.00
	Totals 1917	24,218	4,459	5,552	$28,948.43	5,689	$33,992.13
	Totals for 1916	23,955	4,454	6,836	$32,877.66	7,080	$37,440.65
	Totals for 1915	20,687	4,144	6,036	$26,913.53	5,270	$27,628.92

3—Continued

Swine		Sheep		Poultry						
No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid	Premiums paid agricultural department	Premiums paid pantry and kitchen department	Premiums paid fine arts department	Premiums paid all other departments	Number
30	46.00	42	64.5	160	95.00	156.00	74.20	82.00	40.00	55
133	388.50	40	77.0	182	28.25	59.25	50.25	110.75	96.50	56
41	170.00	29	39.00	45	17.50	82.75	68.25	35.25	199.05	57
263	572.00	108	284.00	1,050	268.30	292.25	179.60	668.25	422.85	58
136	665.00	178	395.00	152	78.15	127.50	70.50	350.50	254.95	59
30	60.50	29	31.50	111	41.50	45.80	26.00	14.50	152.10	60
500	560.50	155	392.00	980	230.20	298.25	95.50	498.50	506.90	61
66	96.50	25	17.00	64	24.50	76.25	40.50	20.75	110.25	62
150	305.00	------	----------	75	34.50	55.25	114.85	120.15	----------	63
------	140.50	------	41.00	197	48.50	64.45	8.75	77.70	33.75	64
32	99.00	12	31.00	36	17.00	101.00	64.50	161.50	----------	65
98	364.70	51	225.90	724	492.50	75.45	32.20	100.15	----------	66
270	287.00	100	136.00	500	174.50	209.50	107.25	224.25	352.50	67
102	120.00	9	25.00	214	112.50	134.00	62.20	45.50	118.00	68
65	143.50	24	33.00	126	30.50	75.50	45.25	16.25	131.00	69
42	48.25	24	32.75	92	42.20	39.90	32.80	38.50	61.80	70
56	156.25	103	272.50	99	20.75	75.75	60.75	57.50	191.85	71
125	232.00	10	36.50	150	55.05	68.25	73.00	169.25	106.45	72
20	50.00	12	35.00	125	40.75	73.50	100.75	200.25	184.50	73
100	175.15	------	26.60	150	28.67	117.50	50.25	49.50	----------	74
85	238.00	15	18.00	1,108	604.75	70.75	70.75	89.25	244.00	75
29	87.00	10	24.00	39	26.00	102.00	59.60	77.70	34.55	76
53	174.50	25	28.00	160	84.50	65.50	136.50	109.55	84.35	77
175	152.00	------	----------	75	50.50	30.00	37.75	40.00	281.20	78
49	60.00	10	14.00	111	27.25	50.65	----------	59.40	23.00	79
150	165.00	60	70.00	160	45.50	67.00	62.75	61.50	85.75	80
206	220.00	117	317.50	76	29.15	93.25	105.50	210.00	128.55	81
24	68.50	------	----------	------	----------	38.25	33.25	33.25	72.90	82
48	136.00	------	----------	26	9.50	85.65	49.00	14.25	86.00	83
46	110.00	20	60.00	11	4.50	60.00	65.00	110.00	25.00	84
57	252.00	42	115.80	------	----------	328.25	39.25	55.00	87.50	85
87	242.00	17	78.00	68	53.50	16.00	11.75	39.75	----------	86
107	122.00	29	51.50	367	145.25	218.00	79.75	231.50	89.00	87
140	232.00	75	175.70	------	122.50	173.00	176.40	50.70	184.75	88
37	133.50	23	33.50	65	28.25	112.80	28.50	78.60	82.20	89
68	176.00	------	----------	291	101.50	187.00	19.75	141.50	----------	90
2,165	786.00	124	365.00	550	73.75	1,559.00	371.10	475.50	20.00	91
42	84.50	20	12.15	171	44.50	85.65	57.25	100.58	10.00	92
44	157.50	8	26.00	64	15.00	31.50	34.00	152.05	21.00	93
10,695	$17,213.64	3,007	$ 7,120.03	16,184	$ 6,822.27	$11,685.07	$ 6,927.21	$11,251.14	$13,266.56	
11,151	$17,435.45	2,897	$ 7,291.30	15,762	$ 6,678.76	$11,993.45	$ 6,611.62	$11,176.08	$13,122.53	
9,377	$14,034.45	2,783	$ 6,140.77	14,317	$ 5,397.08	$ 9,534.51	$ 6,307.62	$ 8,710.29	$12,711.43	

TABLE NO. 4---TOTAL ATTENDANCE, TOTAL PAID ADMISSIONS AND ADMISSION FEES CHARGED AT COUNTY AND DISTRICT FAIRS IN IOWA FOR 1917.

Number	County and City or Town	Total attendance	Total paid admissions	Outside Gate Admission			Grandstand		
				Adults	Vehicles	Children	Day admissions	Total day admissions	Total night admissions
1	Adair, Greenfield	9,302	9,302	50	25	25	15	1,016	500
2	Adams, Corning	5,239	5,239	50	25	20	15	790	------
3	Allamakee, Waukon	10,000	9,000	50	25	----	25	800	100
4	Audubon, Audubon	14,400	14,000	35	35	25	25	2,876	958
5	Benton, Vinton	8,681	8,681	35	25	25	25	2,400	------
6	Black Hawk, Cedar Falls	35,200	28,230	50	----	25	25	11,958	5,811
7	Black Hawk, Waterloo	52,500	34,791	50	50	25	25	--------	3,645
8	Boone, Ogden	6,079	6,079	35	35	25	10	797	228
9	Bremer, Waverly	22,486	16,963	50	----	25	25	5,411	4,087
10	Buchanan, Aurora	3,127	2,787	25	25	15	----	--------	------
11	Buchanan, Independence	12,000	10,510	50	25	25	25	1,200	550
12	Buena Vista, Alta	14,627	14,127	50	25	25	25	2,271	------
13	Butler, Allison	12,000	10,000	35	35	25	15	1,750	1,200
14	Calhoun, Manson	11,162	10,912	50	25	25	15	1,442	1,052
15	Calhoun, Rockwell City	18,000	10,500	50	----	----	25	2,547	------
16	Carroll, Carroll	7,396	5,896	50	35	25	25	1,556	------
17	Cass, Atlantic	19,951	19,951	50	25	25	25	4,392	------
18	Cass, Massena	5,545	5,412	50	----	25	10	1,011	------
19	Cedar, Tipton	14,000	10,108	35	35	15	15	5,012	------
20	Cerro Gordo, Mason City	37,572	23,272	50	----	----	25	11,361	5,266
21	Clayton, Elkader	8,620	7,817	50	35	25	25	1,312	1,103
22	Clayton, National	2,758	2,758	35	25	25	15	431	------
23	Clayton, Strawberry Point	12,000	11,000	50	50	25	15	2,650	650
24	Clinton, DeWitt	18,000	14,500	40	40	15	25	5,525	------
25	Crawford, Arion	5,997	5,825	35	35	15	25	750	------
26	Davis, Bloomfield	31,000	21,225	35	25	15	15	8,670	------
27	Delaware, Manchester	20,000	12,078	35	25	----	25	2,434	2,007
28	Des Moines, Burlington	34,685	31,473	50	25	25	25	16,336	8,872
29	Dickinson, Spirit Lake	8,804	7,888	35	25	25	25	621	369
30	Fayette, West Union	21,000	20,963	35	50	35	25	2,748	2,486
31	Fremont, Tabor	700	640	25	----	15	----	--------	------
32	Greene, Jefferson	12,522	12,522	35	35	20	25	3,016	140
33	Grundy, Grundy Center	16,000	12,500	35	35	20	15	1,394	------
34	Guthrie, Guthrie Center	11,000	10,563	35	35	25	----	--------	------
35	Hancock, Britt	10,000	6,000	50	35	25	25	2,000	------
36	Hardin, Eldora	15,000	13,538	50	25	25	15	2,663	2,532
37	Harrison, Missouri Valley	12,000	9,770	35	35	----	15	1,840	------
38	Henry, Mt. Pleasant	31,700	19,228	50	25	----	25	5,122	2,938
39	Henry, Winfield	3,119	3,119	35	25	15	15	1,169	------
40	Humboldt, Humboldt	9,354	9,537	50	----	25	25	2,442	1,624
41	Iowa, Williamsburg	----------	----------	35	----	25	25	--------	------
42	Jackson, Maquoketa	9,500	7,166	35	25	15	25	1,938	-----
43	Jasper, Newton	21,000	17,413	35	35	----	25	5,134	1,53
44	Jefferson, Fairfield	15,000	10,382	35	35	----	15	1,822	------
45	Johnson, Iowa City	7,580	7,580	50	50	25	25	1,215	695
46	Jones, Monticello	15,000	12,446	35	25	15	25	2,636	1.081
47	Keokuk, What Cheer	9,980	8,980	40	25	25	25	2,200	------
48	Kossuth, Algona	40,000	19,889	50	25	25	25	2,765	2,251
49	Lee, Donnellson	5,500	5,200	35	25	15	----	--------	------
50	Lee, West Point	5,000	4,100	40	25	----	----	--------	------
51	Linn, Central City	12,000	10,000	35	25	15	25	3,000	5,00
52	Linn, Marion	12,546	11,546	35	25	15	15	4,900	3,50
53	Louisa, Columbus Junction	15,000	11,014	50	25	25	15	3,554	1,862
54	Lucas, Chariton	7,290	6,574	35	25	25	----	--------	------
55	Lucas, Derby	----------	----------	25	15	15	----	--------	------
56	Lyon, Rock Rapids	25,000	20,576	50	25	25	25	12,012	------
57	Mahaska, New Sharon	7,336	7,336	25	25	---	25	2,500	------
58	Mahaska, Oskaloosa	36,346	31,006	50	25	25	25	10,190	7,00
59	Marion, Knoxville	19,000	16,640	50	25	25	25	2,774	2,05
60	Marion, Pella	6,050	5,053	35	35	15	25	662	-----

TABLE No. 4—Continued

Number	County and City or Town	Total attendance	Total paid admissions	Outside Gate Admissions			Grandstand		
				Adults	Vehicles	Children	Day admissions	Total day admissions	Total night admissions
61	Marshall, Marshalltown	38,619	27,229	50	25	25	25	6,602	2,283
62	Marshall, Rhodes	3,000	2,020	35	25	----	----	--------	------
63	Mills, Malvern	15,000	11,250	50	25	25	25	4,750	------
64	Mitchell, Osage	8,524	8,316	35	----	25	15	1,720	794
65	Monona, Onawa	4,449	4,449	35	----	25	25	2,177	------
66	Monroe, Albia	14,000	13,500	50	25	15	15	3,600	------
67	Muscatine, West Liberty	18,500	14,511	50	50	25	25	4,977	2,039
68	Muscatine, Wilton Junction	4,930	4,930	35	35	20	15	1,472	------
69	O'Brien, Sheldon	19,500	18,229	50	----	25	25	2,590	929
70	O'Brien, Sutherland	13,500	13,000	50	25	25	25	1,027	------
71	Page, Clarinda	17,500	15,080	50	25	25	50	995	4,283
72	Page, Shenandoah	20,000	17,500	50	25	25	25	2,700	------
73	Pocahontas, Fonda	7,000	6,000	50	25	25	25	1,209	------
74	Pottawattamie, Avoca	11,348	11,348	35	35	20	25	4,798	------
75	Poweshiek, Grinnell	17,442	11,814	35	35	----	25	4,292	3,540
76	Poweshiek, Malcom	7,576	4,092	35	25	25	25	1,668	------
77	Sac, Sac City	10,960	10,960	50	25	25	25	3,373	------
78	Shelby, Harlan	36,000	19,259	35	35	20	25	2,944	1,608
79	Sioux, Orange City	4,924	4,924	50	50	25	25	1,083	------
80	Story, Ames	5,423	3,973	35	25	15	----	--------	------
81	Tama, Toledo	14,162	12,327	50	25	25	25	2,378	1,760
82	Taylor, Bedford	9,000	8,210	35	25	20	15	1,800	------
83	Union, Creston	9,687	9,687	50	----	25	15	1,605	------
84	Van Buren, Milton	3,450	3,296	35	35	----	10	1,940	------
85	Wapello, Agency	1,629	1,209	25	----	10	----	--------	------
86	Wapello, Eldon	7,000	6,308	35	25	15	25	--------	------
87	Warren, Indianola	12,000	10,113	35	25	15	25	3,500	------
88	Wayne, Corydon	12,896	11,551	25	25	----	25	3,959	------
89	Winnebago, Forest City	8,474	8,474	50	25	25	25	1,951	1,649
90	Winneshiek, Decorah	30,000	25,107	50	----	15	25	2,352	1,188
91	Woodbury, Sioux City	70,612	62,012	50	----	25	50	19,329	------
92	Worth, Northwood	5,500	4,285	35	25	----	15	685	------
93	Wright, Clarion	10,000	8,400	50	25	25	25	2,500	------
	Totals 1917	1,345,259	1,094,968	----	----	----	----	270,991	91,766
	Totals for 1916	1,272,479	991,057	----	----	----	----	279,714	66,600
	Totals for 1915	1,115,605	838,047	----	----	----	----	--------	------

Admission Fees Paid	50 Cents	40 Cents	35 Cents	25 Cents	20 Cents	15 Cents	10 Cents	No Charge
Gen. admis'n, outside gates:								
Adults	44	3	40	6	--------	--------	--------	------
Vehicles	6	1	20	50	--------	1	--------	15
Children	--------	--------	1	50	7	19	1	15
Grandstand admissions:	2	--------	--------	57	--------	21	3	10
Quarter stretch admissions:								
Persons	--------	--------	--------	30	--------	13	2	48
Vehicles	2	--------	1	14	--------	1	--------	75

IOWA STATE FAIR AND EXPOSITION.

The sixty-third Iowa State Fair and Exposition not only set new records for attendance, receipts, etc., but a new record was achieved for fulfilling its real mission as an educational institution. The Iowa State Fair in former years has had a larger exhibit of horses and cattle, but at no previous fair were the exhibits of such a uniform good character.

The barns were all well filled and the cattle exhibit necessitated using the old sheep sheds and a tent or two to house the overflow.

The exhibit of sheep filled every pen in the new pavilion and set a new record for quality and number. The swine pavilion was taxed to its capacity with an exhibit of swine of the highest quality.

Measured by such material standards as attendance and financial returns the Iowa State Fair of 1917 was successful even beyond the dreams and desires of its most enthusiastic friends and managers. But in measuring the success of an institution of this character, attendance and financial remuneration are not enough to insure a full and proper estimate. Its influence upon the people who attend must be considered; also its general effect upon the agricultural and stock-growing interests of Iowa and the many other states that contributed so abundantly from their herds and flocks.

Did the Iowa people find the fair good? Did they go back to their homes filled with pride in the beauty, strength and magnificence of the fair as a whole? Did they go away mentally strengthened and invigorated and filled with new ambition for the future? Did they grasp the great, underlying and vital aim and principle of the fair, which is to point the way to better methods of farming, to make better and more efficient men and women and to develop a higher, cleaner citizenship? If so, then indeed the fair was successful.

All who made a careful study of the fair with minds unbiased and open to conviction are prompt to answer all such questions in the affirmative. The fair lived up to its advance notices. The people found it excellent and have not been backward in voicing their expressions of approval. Thousands of Iowa citizens returned to their farms imbued with new ideas and ideals, with revived enthusiasm and fresh stores of inspiration and a mighty pride in the state that can present such an extraordinary demonstration of agriculture and its allied industries, a demonstration that is the wonder of the entire country.

WEATHER MAN WAS KIND.

The weather was of the made-to-order brand, ideal for fair purposes. Ten bright, late-summer days, neither too warm nor too cool for pleasure seeking, characteristic of Iowa in the closing days of August. Copious showers over central Iowa two or three days before the fair opened furnished pastures and cornfields with much-needed moisture, greatly mitigated the dust evil and made motoring to the fair vastly more pleasant than it would otherwise have been.

NEW ATTENDANCE RECORD SET.

All summer the fair management had been compelled to face unusual conditions, and more than a few hindering circumstances. Nevertheless, from the time the gates were thrown open it was evident that a new attendance record was likely to be established, a forecast that grew plainer with every passing day until the final count Friday evening showed a grand total of 349,298, a handsome gain over the previous high mark in attendance, 291,972, the figures for 1916.

A FAIR OF SYMMETRY AND PROPORTION.

It has long been the aim and ambition of the state fair management to preserve a happy balance between features and exhibits of educational value and those of purely recreative complexion. In other words, to keep the fair from growing lopsided. For the fair, great or small, that runs to either extreme travels a speedy way to unpopularity. To satisfy the diversified tastes of 350,000 visitors in the brief space of ten days a fair must of necessity be comprehensive in conception and liberal in execution, for it has to cover a wide territory.

From early morning until noon each day was devoted to stock judging, lectures, educational demonstrations of various character and music. There was no lack of the last named. Go where he would about the grounds the visitor was seldom out of hearing of the harmonious strains of band or orchestra. The great stock pavilion was packed to capacity day after day with interested spectators studying the fine animals and watching the distribution of the ribbons. Steady streams of humanity flowed through the broad aisles of the huge barns and pavilions that sheltered the choicest specimens of live stock from all parts of the country. The College Building and the Boys' and Girls' Club Building attracted those interested in canning and food conservation. The Poultry Building and the Agricultural Building were centers of attraction according to the varied tastes of the visitors. The beautiful Women and Children's Building was thronged the day long with femininity, from tiny tots to tottering age, with more than few members of the sterner sex, some frankly enjoying the programs, others obsessed with an air of uncertainty as if doubtful whether even their boasted rights as lords of creation entitled them to enter.

By midday the majority was beginning to weary of sightseeing, and with lunch disposed of there was a general movement toward the grandstand and bleachers to enjoy the afternoon program of racing, music, hippodrome acts of more than a dozen varieties, auto polo, etc., in unbroken succession till supper time.

SOLDIERS ADDED TO INTEREST

The presence of nearly 5,000 soldiers camped upon and about the grounds added greatly to the enjoyment of the days and stirred untouched wells of patriotism in the hearts of a people who have been finding it just a bit hard to get fully adjusted to the fact that the United States, so long a nation of peaceful pursuits, is at last actively engaged in the mighty war across the Atlantic.

Friday, August 25, was signalized by a Flag Raising, conducted by the fair officials and the state troops. A splendid staff, 125 feet high, had been set in the centerfield just across from the grand stand. After the customary military ceremonies and to the accompaniment of the Star Spangled Banner by the band the "flag of our fathers" was run up to the top and its folds floated out in the free winds of heaven. It was followed by the English and the French flags, and throughout the fair the three splendid banners of red, white and blue made a beautiful and inspiring picture against the sky, emblems of the great international endeavor to establish a world-wide democracy and to bring about conditions which shall insure everlasting peace upon earth.

The following day the colored troops, 1,200 strong, came in from the Officers' Training Camp at Fort Des Moines and put on a series of drills and maneuvers that demonstrated military training and efficiency in a way that very few of Iowa's two millions and more citizens had ever witnessed.

On Wednesday of the following week, State Day, Colonel E. R. Bennett tendered Governor Harding a review of the Third Iowa Infantry. Twenty thousand people packed the grandstand and bleachers, while more than twice that number swarmed about the track and upon the hill east of the track, to watch the 3,600 swing past the governor's stand. It was an unusual sight for staid old Iowa, so long unaccustomed to the call of trumpet and beat of drum for war. It was a splendid exhibition of young Hawkeye manhood. Most of the boys still wore the tan and bronze painted by the winds of Texas a year ago while they patrolled the border line between Uncle Sam's country and a condition approaching chaos. They looked fresh and fit and fine and as tough and hardy as an army of bull moose; and down in his heart every spectator knew that afternoon that, go where they will, Iowa will never have reason to be anything but proud of the Third Iowa, now listed as the 168th U. S. Infantry.

On other days of the fair the ammunition train, under the command of Col. Fred L. Holsteen, and Battery F, under the command of Capt. G. W. Dulany, Jr., added a military touch to the program in front of the grandstand. The drills and maneuvers put on by these two organizations reflected great credit upon the officers and men. They executed the commands and drills like seasoned men, regardless of the fact that most of them had been in training less than thirty days.

IOWA'S OWN SYMBOL OF PROSPERITY

As the leading corn growing state of the Union, Iowa is entitled to a distinctive and appropriate symbol peculiarly her own. It was a happy thought that found consummation in the giant "Horn of Plenty" that made the Iowa exhibit one of the cardinal centers of attraction at the Panama-Pacific Exposition in 1915. In that giant "Horn" Iowa found a fitting and tangible expression telling of the chief industry of the state and clinching the claim that "corn is king."

This splendid exhibit was reproduced for the fair last year, down to the smallest detail, exactly as it appeared at San Francisco. It was by all odds the most striking and popular exhibit on the grounds, and was plainly so productive of satisfaction that the management decided it would be an error not to present it again this year.

The same constituency that enjoyed it in 1916 viewed it again this year—with a good many thousands added. Their satisfaction was so plainly unabated with the passing of a year that one is led to the conclusion that it might be a good idea to continue it indefinitely. Located as before in the center of the Agricultural Building it towered majestically over all other exhibits. It was the first object to catch the attention of visitors entering the building, and the impression of Iowa's supremacy in corn growing was fixed instantly and for all time to come.

It was interesting to watch the attitude of the endless throng of visitors passing through the building. All stopped to gaze upon the great outpouring tide of yellow corn. Some gazed in wonder, others in speculative mood. Out of state fair visitors overwhelmed attendants with questions, while thousands of native Iowans lingered lovingly before it, passed on, and returned for a second and third feasting of the eyes upon its beauty.

BOYS AND BEEF

Probably the average fair visitor failed to fully grasp the real significance of the Boys' Baby Beef Contest. This movement, promoted jointly by the extension department of the Iowa College of Agriculture, the Iowa Beef Producers' Association, and the State Board of Agriculture, has stirred the keenest kind of interest among the farm boys of the state, and most of the fairs, great and small, have been favored with exhibits in the way of fine calves fed by the members of the club.

The Baby Beef class at the state fair received sixty-four entries and no less than fifty-nine lads actually showed up in the ring with the tangible results of their labors. It was an unusual sight, and the spectator given to looking beyond the present hour found abundant food for thought and saw much that was not visible on the surface of things. The calves were an excellent lot. Some of them were manifestly of the choicest breeding and gave unmistakable evidence of unusual skill and judgment in fitting. Professor Pew, of Ames, sifted out the winners and was liberal in praise of the good work done by the boys.

Several that gained high places in the contest were reserved for other fairs and shows and finished the campaign at the International Stock Show in Chicago. Forty-six head of the fifty-nine shown were sold at auction Thursday afternoon. A big crowd gathered in the Stock Pavilion to watch the sale. Several Chicago buyers were present, but showed little disposition to bid above ordinary market values. An enthusiastic representative of the Iowa Packing Company at Des Moines outbid the Chicago men on everything of high class and actually lamented the fact that they did not compel him to bid higher for the sake of the boys who fed the calves and the good of the movement generally. Top price of the sale was $16.50 a hundred.

YOUNG PEOPLE PROMINENT.

It was good to see so many young people present, and better still to see them taking such an active part in the various departments. Wednesday, August 29th, was Boys' and Girls' Club Day, and hundreds of club members from all parts of the state were present and contributed to the success of the day. This club work is assuming decidedly majestic proportions and influence in the state. There are twelve branches or divisions in all, with a combined membership of nearly 175,000. All the various divisions were represented—baby beef clubs, pig clubs, garden clubs, canning clubs, etc., and when the grand parade started at one o'clock more than 1,000 members from fifty different counties fell into line with their banners. It was a thrilling exhibition of youthful enthusiasm and ambitions, and many a gray-headed veteran watched them with quickened pulse beats and wished it were possible to turn back the pages of time and live life over again.

EXTRAORDINARY EXHIBITS OF MACHINERY.

Manufacturers of farm implements and labor-saving devices of all kinds in use in the world of agriculture have for many years past found Iowa a fat field for their operations, so fat, indeed, that the state is credited by their statisticians as purchasing more farm machinery than any other one state in the Union. The machinery show at the fair might well be accepted as Iowa's attitude toward the general use of labor-saving appliances. For certainly it was a marvelous demonstration of the application of power, gas and electric, for the completion of tasks formerly achieved by muscular effort and mental perseverance. Nothing to equal it had ever been seen before in Iowa.

The tractors were out in full force, with at least three times as many on exhibition as had ever been shown at any previous fair. They were in endless variety and were subjected to careful consideration and expert scrutiny by hundreds of Iowa landowners seeking to solve that increasingly perplexing problem of farm power in the absence of competent help. Iowa is a liberal buyer of tractors, according to the figures presented by the tractor builders, purchasing a little more than 11 per cent of the tractors distributed in this country last year.

In other years a large part of the space in Machinery Hall was devoted to buggies and other lighter horsedrawn vehicles. Even last year a considerable number were to be seen, but this year pretty nearly marked their passing, only a scant half dozen or so being shown along with a few farm wagons. In their stead the visitor found farm trucks, trailers and accessories in endless array.

The auto show, made up of half a hundred different makes, occupied the large show room under the grandstand and a temporary annex built along the south side of this room. The show was made up of 1918 models and included all the leading makes of pleasure cars.

An excellent idea of the progress being made in dairy matters was presented in the exhibits of cream separators, churns and butter-making appliances of all kinds; also in stable fixtures for dairy cows, which mean comfort and sanitation with increased milk production to correspond. There seemed to be no end to the number of engines, big and little, and of various types for the application of the power on the farm from running the churn and washing machine to the thresher and road-grading machine. A wonderful and convincing demonstration of the revolution in methods that enables the farmer to accomplish a maximum of results with a minimum of labor.

LIVE STOCK SHOW SATISFACTORY

If the stock show slumped slightly in numbers certainly there was no impairment of quality to be found in the thousands of choice animals on exhibition. The extremely high prices for feed which prevail in all parts of the country, together with the difficulty of obtaining competent help for fitting show animals, prevented a good many exhibitors from making the shows this fall and explains why most big fairs have fewer entries this year than in 1916. Even at that with more than 5,000 fine animals on exhibition in the various departments there was enough to occupy the average visitor's time to the limit. A very plain and gratifying fact, easily discernible to the most casual observer, was the increased number of Iowa exhibitors, mostly young men.

MANY IOWA HORSES SHOWN.

For obvious reasons many of the big importers formerly to be seen at the Iowa State Fair were missing. The hundreds of stalls that used to be filled with choice specimens of the various draft breeds from across the Atlantic were occupied by home bred animals, with Iowa-bred horses in the majority.

There was a grand show of Belgians, the best by far that Iowa has ever seen. The younger animals in particular, almost without exception, were bred and grown in Iowa and are superior to anything the rest of the world can produce in that line. And they clinched forever the claim made by enthusiastic horsemen of the state that Iowa can be depended on to preserve the Belgian drafter for the future. And it might be added that Iowa will not only preserve but improve the Belgian, for the best specimens of this breed to be found in Iowa today are in many respects superior to the type originally brought into the Middle West from the other side.

The Percherons were a splendid lot. An occasional aged animal could be found hailing from across the water, but the bulk of the exhibits were bred in the Middle West. And no man of unbiased judgment is willing to go on record as saying that they are inferior to the imported stock that formerly filled the stalls. A few were lacking in size and weight, but there were plenty of big ones. Class for aged stallions brought out twenty-three contenders and first, second and third monies were given to home-bred animals. Not many three-year-old stallions, but a big string of two-year-olds and a fair showing of yearlings.

CATTLE SHOW UP TO STANDARD.

Dairy cattle were out in fewer numbers than last year, but empty stalls were scarce in the barns that housed the beef breeds. In addition to high-priced feed and scarcity of competent fitters there is another reason that undoubtedly kept some cattle exhibitors away this year, and that is the lack of suitable quarters for all the herds. The ancient wooden structures well back towards the rear of the cattle section are poor places to stable priceless animals, not to mention the fact that they are so far out of the way of the sight-seeing public that few visitors find them. The breeder who has to accept stalls in those dark old shacks has more reasons than one to kick. The crying need of the Iowa State Fair is a cattle barn in keeping with the annual exhibits and the cattle industry of the state. Without it exhibits in this department will surely slump in the future and the enviable reputation gained by the greatest of all state fairs suffer accordingly.

As usual in Iowa the Shorthorns took the lead. Local exhibitors were out in goodly numbers and more than held their own with many of the best herds in the country. Aged classes, both male and female, were not so strong in numbers as in previous years, but there was no lack of contestants in the younger classes. And quality of the entries was on a par with numbers. The expert who studied the yearlings with an eye toward the future could find nothing but encouragement.

A REPRESENTATIVE IOWA SWINE SHOW.

It was Iowa's own swine show, one typical of the high position held by the state in the list of pork-producing commonwealths. More than 90 per cent of the army of exhibitors listed are residents of Iowa. Nine breeds were included in the classification and nine states contributed to the show. In numbers the Duroc took a long lead and demonstrated once more the wide popularity enjoyed by the breed. Poland China and Chester White breeds were out in goodly numbers and there was a cracking good show of Hampshires.

One of the impressive features of this mammoth show was the remarkable uniformity of type shown in exhibits from so many different parts of the country. Another was the scale and tremendous weight shown by the contestants in the aged male classes. Thousand-pound boars were the rule, not the exception. Visitors gazed in amazement and computed values at prevailing market prices.

Business was good and sales numerous. That many men made the trip to the state fair to serve both business and pleasure was amply demonstrated about the Swine pavilion, for more than 800 animals were sold and distributed to new homes during the week. As might be expected, prices ruled high. One breeder arrived on the grounds with twenty head. He had planned to visit three or four of the big state fairs before returning to his own vine and fig tree, but after selling nineteen of the twenty changed his plans and shipped the one animal left back home.

STRONG SHEEP SHOW.

The sheep show was undoubtedly the best ever seen in Iowa. Every pen in the fine new Sheep Pavilion was filled. Quality as a whole extremely high, which may be taken as a distinct compliment for Iowa sheep breeding interests, for the majority of the animals shown are Iowa bred and owned. The extraordinary prices for mutton and wool that have prevailed the last few months have set Iowa landowners, thinking earnestly, a fact made very plain by the interest shown by the very unusual number of visitors that thronged the aisles of the pavilion.

The Shrops, a general favorite in Iowa and the Middle West, were in the majority, and as like in type and character as peas from the same pod. A significant feature of the Shrop contests was the defeat of imported animals by Iowa sheep in the championship events. Breeders from Nebraska, Wyoming, Wisconsin, Ohio and Kentucky sent their choicest flocks to compete with Iowa.

Buyers seemed to be numerous, not only ram buyers but men looking for bands of ewes for foundation flocks. Evidently Iowa is taking notice. And while the state has never been listed with the heavy mutton and wool-growing commonwealths, it has, nevertheless, continued the "even tenor of its way" and can plead not guilty of any such slump as marks the business in too many states. If the interest shown in the sheep department during the fair is to be taken as a criterion Iowa will enjoy a marked growth of interest in the production of mutton and wool in the near future.

STATE INSTITUTION EXHIBITS.

The exhibits prepared by the various penal and reformatory institutions of the state were among the most interesting on the grounds. Regarded from an educative point of view they were exceedingly valuable and told an eloquent story of the efforts of the superintendents to furnish employment for the "shut-in" population of the state.

One large tent in the live stock section was filled with a very creditable display of stock, chiefly cattle, in which the Holstein breed predominated. Another tent located at the foot of the hill on East Grand Avenue contained thousands of specimens of the handiwork prepared by the inmates of a dozen institutions.

Humanity in general confesses to a sort of horror of all such institutions, thinking of them only as places of forcible detention where the inmates are shut away from the great, busy world, even as the beasts of menagerie and zoo are deprived of their liberty. This is altogether an erroneous idea, as more than a few have discovered after visiting some of the institutions and learning something of what the state does for its wards in the way of education and training, mental and manual.

At the Reformatory School in Eldora manual training very naturally and logically occupies a large part in the curriculum. The exhibit from this school was fine and many articles of furniture made by the lads would be a credit to any furniture making establishment. The Mount Pleasant home for insane and mentally afflicted had one of the finest exhibits of the home canner's art that was ever prepared for any fair. It included every fruit and vegetable grown in Iowa—which means a pretty long list. Visitors gazed upon it in wonder and amazement, marveling at the ability of the workers that prepared it.

The children at the Home for Feeble Minded at Glenwood sent a fine exhibit of fancy work of their own making, canned fruits and vegetables, and a display of basket ware so perfect in workmanship and beauty of design that it called for quite a stretch of the imagination to accept it as the actual handiwork of children supposedly mentally incapable of concentrated effort in any line.

Fort Madison came with an abundant stock of woven rugs, and large numbers were sold to visitors. Knoxville had an exhibit of brick, tile, etc., that was as good and durable as can be found manufactured anywhere in the state. Twelve institutions in all were represented. To give up this annual exhibit, as was talked of at one time, would be an injustice to the inmates of the various institutions and deprive the public of the one best method and opportunity—outside of personal visits of inspection—of acquiring knowledge of the daily life and work of the inmates.

PEOPLE ENJOY MUSIC.

Fair visitors seemed to find a world of enjoyment in the music furnished by nearly a dozen bands, orchestras and other musical organizations. From eight o'clock in the morning until ten at night it continued with scarcely an interruption. Whenever one of the many bands and orchestras appeared it was the signal for a gathering of humanity eager to listen and enjoy. The cattle and horses were judged in the Stock Pavilion to the lively accompaniment of orchestras. Visitors to the exposition and agricultural buildings viewed the exhibits and enjoyed the music at one and the same time. The fancy steppers and the high jumpers performed to music at night and the trotters raced to the strains of bands in the afternoon. The Thaviu Band with accompanying grand opera singers and Russian ballet dancing introduced a new and somewhat novel note given to Iowa people only at infrequent intervals.

The singers of the popular songs of the day, accompanied by the Henry Band, made a general hit, while the national drum corps, composed of veterans of the civil war, furnished a martial note entirely in keeping and harmony with the warlike aspect contributed by the thousands of soldiers on the grounds. Probably no other one feature of the fair furnished such universal enjoyment as the music.

BOYS' JUDGING CONTEST.

It was a large and enthusiastic following of youngsters on the near side of twenty-one years that gathered to participate in the Boys' Judging Contest. The total number entered was 182, but a few fell by the way and 160 finished the contest with colors flying according to points gained. The prizes were well worth striving for, but we imagine a liberal proportion of the bunch of budding stock growers would have been quite as keen for the trial if no prizes had been offered; for the high standing of so many of the contestants indicated earnest study and careful observation that come from but one incentive—a love of fine animals.

The boys were required to pass judgment on live stock and corn. There were two classes of each, and fifteen minutes' time was allowed for each class to study the subjects and write out reasons for positions assigned. First place was won by Geo. W. Halstead of Ames, who scored 684 out of possible 800 points; Aubrey Johnson of Cresco, was second with 681 points; Raymond McMillan, Mount Pleasant, stood third with 679 points; Harry Farrington, of Silver City, made fourth place with 673 and Carl E. Bates fifth with 672 points. The reader will agree that it was an exceedingly close and keen contest with only twelve points between first and fifth places.

FOOD CONSERVATION.

The Iowa College Building and the Boys' and Girls' Club Building were the strongholds of the food conservation forces during the fair and centers of interest from early morn till night. A radical departure from previous exhibits was noticeable in the College Building. While conservation and preservation of foodstuffs constituted the keynote, the exhibits did not stop with that feature, but showed in a hundred ways how to conserve human strength and energy, and how to multiply the comforts and add to the welfare and happiness of farm workers. One of the most interesting and instructive features in this line was the electrical exhibit, which demonstrated the application of electric power to practically every farm task, both outdoor and indoor. It was thoroly educative and edifying, and sent many a visitor back to the farm with new ideas and a determination to put them into practice.

THE POULTRY SHOW.

With hundreds of chanticleers crowing challenge to competitors and thousands of visitors voicing admiration for their feathered favorites the Poultry Building was a busy and noisy place.

It was a grand display of what might be called the feathered resources of Iowa, by no means an industry to be overlooked when the annual output of poultry products reaches well beyond $30,000,000. The premium classification provided for more than one hundred varieties of the different breeds and strains, and judging from the bedlam of crowing and cackling they were all numerously represented. Farm flocks of choice breeding were much in evidence and went far to confirm the experience of travelers who cross the state with their eyes open, either by rail or auto route, that Iowa is a land of pure bred poultry.

There were many practical demonstrations and object lessons in connection with the show for the benefit of poultry growers, caponizing, killing, dressing and packing; preservation of eggs, fighting lice and prevention of disease.

NIGHT SHOWS POPULAR.

The night shows were more liberally patronized than ever before. With the exception of one night the Stock Pavilion was packed to capacity to enjoy the horse show. The programs varied from night to night, but were always of a character to interest lovers of fine animals and gay trappings. Missouri, as usual sent a large number of her splendid saddle horses to contribute to the gaiety of things; and while the average Iowan prefers a car for pleasure riding, he enjoys the saddle horse contests immensely. The hunters and high jumpers were out in fewer numbers than formerly, but put up a fairly good show nevertheless.

The grand stand and bleachers were packed with humanity night after night to witness the presentation of ''Modern Warfare.'' As an attraction it fitted in perfectly with prevailing conditions and took on a new significance in connection with the warlike preparations visible on every side. The closing scenes of the pageant were decidedly beautiful and spectacular, and the splendid tableau, "The Call to the Colors," never failed to bring the great audience to its feet in a glorious burst of enthusiasm.

AFTERNOON PROGRAMS ENJOYED.

The afternoon programs of racing and more than a dozen hippodrome and circus acts were thoroly enjoyed. The grand stand, bleachers and paddock were packed day after day. The weather was delightful, for one thing, and the amount and variety of entertainment offered permitted no lagging of interest. From 1:30 to 5:30 it was a continuous performance. A three-ring circus is a tame and colorless affair after an afternoon at the Iowa State Fair when the weather is right and the program in full swing.

It is true the race track is what horsemen call a "twice around." But it suits the Iowa people perfectly. They like to see the horses come around often and they enjoy watching the progress of the race thruout the entire mile, which is impossible to the unaided eye on a mile track. Besides it is the contest rather than the mere item of speed, that makes racing enjoyable; and when both are furnished, as they were at the Iowa fair, there is nothing more to be desired. Four harness races and two running races were included in every afternoon program, along with a lively bout of auto polo, drills by the soldiers and the previously mentioned hippodrome stunts.

PEOPLE THE BEST SHOW.

After all the Iowa people themselves were the best part of the fair. Think of 350,000 citizens of the state getting together in a single week for a general touching of social and industrial elbows. Every county in the state contributed to this great annual demonstration. Standing upon some high point of vantage an observer might truthfully say: "Behold the population of Iowa!" for every walk in life and every line of endeavor were represented. A clean, wholesome, prosperous people. A single comprehensive glance over the great throng was a sufficient evidence that Iowa is indeed the "land of plenty." A law-abiding people that needed no policing. An occasional unintentional infringement of traffic rules by auto drivers constituted the sum total of transgression. A busy people, a progressive people, a bone-dry people, their two million souls filled with peace and contentment with the passing of J. Barleycorn and his intimate associate, Disorder.

Following the financial statement will be found a number of comparative tables showing the attendance at outside gates, grand stand and night horse show; also the number of entries in the various departments and the number head of live stock entered and exhibited.

RECEIPTS AND DISBURSEMENTS OF THE FAIR.

The total receipts of the 1917 fair were $257,122.56, exceeding the previous best year, 1916, by $55,740.60. Practically every department of the fair showed an increased income over last year. The concession and privilege department is credited with an increase of $8,250.00. A greater part of this is due to an unusually large patronage of the midway shows and riding devices, with only a slight gain in the amount received for general stands, etc.

The speed department shows an increase of over $4,000, due to the added entry fees received in the two $3,000.00 early closing events, which were new features this year.

The forage department shows an increase in receipts of $5,582.00 which simply represents the additional receipts in proportion to the additional cost of all forage.

Ticket sales showed the most marked increase. The total increase being $35,659.45. This increase was divided as follows: Outside gates $21,203.45; day grandstand $7,581.50; night grandstand $6,310.00 and night stock pavilion show $564.50.

The 1917 fair cost $189,533.38. Of this amount $72,442.07 was paid out in cash premiums.

The increased cost of conducting the fair was about $20,000 or 12½ per cent more than last year. This increased cost occurred in practically all departments and especially in the grounds and other departments where a great deal of labor was employed. The other large increases were $5,381 in cash premiums; $6,369.00 in the amount paid for forage; $1,407 for advertising and $1,295 for music and attractions.

The profit on the fair was $67,589.18. This enabled the board to pay off the indebtedness of $20,000, make a number of minor improvements and place all buildings in first class repair.

The balance on hand, November 30th was $34,822.20.

The itemized statement made a part of this report sets forth in detail the receipts and disbursements of the fair.

IMPROVEMENTS.

There was expended under the direction of the board for additional land, improvements and permanent repairs to buildings, $38,773.77. Of this amount $24,832.25 was paid from state appropriation and the balance $13,941.52 was paid out of the profits of the 1917 fair.

The state appropriation for additional land was used in purchasing seventeen acres east of the cattle barns for exhibitors' camp ground and five lots to square out the southwest corner of the grounds. The total cost was $12,332.25. This leaves a balance of $167.75 of this appropriation that has not been drawn from the state treasury.

The state appropriation of $20,000 for repairing buildings and paving East Thirtieth street, was partially used this year. $12,500 was drawn and applied on the expense of recoating the tar and gravel roof on the grand stand, swine pavilion, Dining Halls, Machinery Hall, Women and Children's Building porches and Administration Building porches; also for repairs and painting practically every building on the grounds. The balance of $7,500 of this appropriation has not been drawn from the state treasury, but will be used to pay the paving assessment against the grounds.

One of the noticeable improvements made at the grounds this year was the new entrance at the corner of Thirtieth and Walnut streets, which cost $1,296.00. The entrance provides three gates for vehicles and four turnstiles for pedestrians. This will relieve the congestion at the Grand avenue vehicle entrance as soon as East Walnut and East Thirtieth streets have been paved. The contract for this paving has been let and the work will no doubt start early in the spring.

The board also built an addition to the poultry building 48 x 64 feet at a cost of $3,026.00, including the necessary cooping and flock pens to equip the new addition.

The following itemized statement sets forth in detail the amounts expended for improvements and permanent repairs; also the amounts expended for maintaining buildings and grounds.

ITEMIZED STATEMENT OF RECEIPTS AND DISBURSEMENTS OF THE IOWA DEPARTMENT OF AGRICULTURE AND THE IOWA STATE FAIR AND EXPOSITION FOR THE FISCAL YEAR ENDING NOVEMBER 30, 1917.

Cash balance December 1, 1916			$ 3,998.17
Receipts from sources other than fair:			
Fees, stallion registration division		$ 8,676.50	
State appropriation for land		12,332.25	
State appropriation for repairs		12,500.00	
State appropriation for support of Dept. of Agri.		2,400.00	
State appropriation for insurance		1,000.00	
Stall rent speed barns		596.50	
Pasture rent		96.81	
Interest		276.16	
Use of buildings for storage		347.50	
Use of barns for horse and cattle sales		525.00	
Sale of forage left over from 1916 fair		101.96	
Corn from Horn of Plenty, sold		130.54	
Rent for Wilkins' house		56.00	
Rent for poultry cooping		100.00	
Sheep sold		1,356.64	
Refund, overpayment 1916 adv. account		43.25	
Expense warrants—charged off books		45.73	
Received for copy county fair proceedings		11.25	
Special prize money 1916 sheep shearing contest		39.00	
Advertising space 1916 premium list		2.00	
Motor sold Des Moines Electric Co.		150.00	
From sale of old shed on Wilkins' land		15.00	
Kindling sold		23.00	
Old lumber sold		17.75	
Old gas pipe sold		8.50	
Misc. sales by superintendent of grounds		15.25	
Water furnished game farm		82.00	
Received for labor account military camp		374.06	
Received for painting private buildings		71.99	
Received for water furnished military camp		778.72	
Total receipts other than fair			$ 42,173.36
Receipts of 1917 Fair:			
Stall rent, horse department		$ 1,362.00	
Stall rent, cattle department		1,203.00	
Pen rent, swine department		1,139.00	
Pen, rent, sheep department		196.00	
Coop rent, poultry department		408.50	
Concessions, poultry building		230.00	
Machinery department:			
Floor space, Machinery hall	$ 3,356.25		
Floor space, Power hall	297.00		
Floor space, auto show room	1,790.40		
Outside space contracts	133.00		
Rent for plowing demonstration ground	101.00		
		5,677.65	
Concessions, Agricultural building		1,380.00	
Dairy department, ice cream sales		2,229.70	
Concessions and space, Exposition building		2,935.00	
Concession and privilege department:			
General concessions	$ 20,052.81		
Wortham Shows (per cent)	8,318.70		
Grandstand concession (per cent)	2,037.39		
Score card privilege (per cent)	471.09		
Giant coaster (per cent)	2,115.05		
Delivery and baggage permits	672.00		
		33,667.04	
Light and power sold		409.23	
Collections from telephone exchange		445.63	
Speed department, entry fees		6,109.50	
Western Breeders' Futurity fund		1,210.00	
Iowa State Fair Futurity fund		584.84	
Sale of forage		14,942.85	

Association special premiums		7,225.79	
Entry fees National Draft Horse Futurities		594.00	
Advertising in premium list		1,175.00	
Received on advertising caps		42.00	
Receipts from day nursery		130.28	
Receipts from napkin machines		10.45	
Refunds on pay rolls		14.90	
Admission paid after close of fair		1.00	
Total receipts of fair other than ticket sales		$ 83,323.36	

Ticket sales:

Exhibitor's tickets sold by sec'y	$ 3,318.00		
Outside gates	110,534.95		
Day grandstand	29,297.00		
Night grandstand	26,971.25		
Night stock pavilion	3,678.00		
Total ticket sales		173,799.20	
Total receipts of fair			$257,122.56
Grand total receipts			$303,294.09

DISBURSEMENTS.

Disbursements other than fair or improvements:

Stallion or Registration Division:

Salary, chief clerk	$ 1,500.00	
Salary, clerk and stenographer	900.00	
Salary, extra clerks	422.50	
Office supplies	20.70	
Binding report	91.20	
Stud books	22.40	
Expense examining stallions	23.60	
Dues National association	2.00	
Seals for certificates	9.93	
Expense attending meeting Nat'l assn.	49.33	
		$ 3,041.66

Publicity Department:

Salary, director, seven months	$ 875.00	
Salary, stenographer, seven months	630.00	
Printing Greater Iowa	999.78	
Postage, Greater Iowa	60.16	
Mailing Greater Iowa	4.60	
Drayage, Greater Iowa	14.50	
Cuts and engravings	114.08	
Making addressograph plates	33.49	
Office supplies	9.26	
Envelopes and wrapping paper	84.09	
Newspaper clippings	36.00	
Expense attending International Live Stock show	30.77	
		2,891.73
State Agricultural convention		568.23
Feed and caring for sheep		686.68

Expense 1916 fair paid during 1917:

Premiums paid	$ 79.00	
Advertising accounts	44.64	
Fair ground supplies	87.66	
Entry fees refunded	24.00	
Binding 1916 award books	7.00	
Miscellaneous expense	21.44	
		263.74
Bills payable		20,000.00
Interest on bills payable		930.00
Expense of live stock sales		246.85
Drayage on poultry cooping for winter show		53.50
Committee meetings spring show and sale		124.80
Insurance premiums on buildings		1,609.27
Clerical help on crop statistics		123.00
Labor opening fence for house mover		6.50

Expense on account of military camp	1,050.72	
Painting private buildings on grounds	105.96	
Labor breaking up old arc lights and junk	31.50	
Premium on secretary's bond	25.00	
Dues Chamber of Commerce	20.00	
Dues East Des Moines Commercial association	10.00	
City directory	7.00	
Subscription for daily papers	13.80	
Printing report of food conference	11.50	
Expense attending St. Louis food conference	25.75	
Expense attending Sioux City food conference	4.46	
Auto hire, account legislative com. to fair grounds	10.00	
Freight and drayage	5.17	
Wire for paper press	1.45	
Banquet tickets Iowa Shorthorn Breeders' meeting	12.00	
Total expense other than fair or improvements.		$ 31,880.27

Maintenance of Grounds and Buildings:

Wilkins' house, papering	$ 4.75
Water system, repairs and temporary extensions	443.13
Superintendents and assistants and watchman	1,704.76
Mule and horse team, feed, shoeing, etc	524.51
Motor truck, gas, oil and repairs	285.46
Tools and implements, repairs	74.17
Repairs to gates, Grand avenue	15.12
Brick horse barn, painting roof and repairs	451.25
Water, except July, August and September	175.77
Harness, repairs	9.20
Streets, dragging and grading	138.00
Race track, resurfacing	512.25
Race track, working and sprinkling	532.40
Trimming trees	12.75
Seeding and resodding lawn	30.75
Cleaning buildings	85.45
Drainage system, repairs	71.94
Speed office, repairs	1.25
Cleaning grounds	87.00
Grading and filling barns	70.75
Hauling manure from speed barns	247.88
Glass, miscellaneous buildings	97.52
Farm house, paper and painting and repairing furnace	86.96
Drayage	212.25
Speed barns, repairs	32.25
Outside fence, repairs	112.50
Track fence, painting and repairing	93.75
Stock pavilion, painting roof and repairs	356.37
Exposition building, repairs	20.50
College building, repairs	34.50
Mowing grass and weeds	98.75
Bleachers, repairs	1.50
Street car station, painting roof	75.05
Cattle barn No. 1, painting roof	47.50
Cattle barn No. 2, painting roof	51.80
Cattle barn No. 4, painting roof	68.25
Administration building, painting roof	72.66
Machinery hall, painting metal roof	50.05
Cattle barn No. 3, repairs	5.00
Walks, repairs	34.40
Horse barns, 1-2-4, repairs	6.00
Agricultural building, painting roof	172.25
Transformer station, painting west end	14.90
Amphitheater, repairing chairs	97.80
Brick dining hall, painting front and roof	105.00
Blacksmith shop, painting	5.25
Turnstiles, repairs	24.50
Locks, repairing and fitting keys	11.55
Wells and pumps, cleaning and repairing	26.50
Butcher shop, painting	3.75
Floral hall, painting	3.75
Toilets, fly proofing and repairs	187.57
Repairing exhaust fan	23.55
Repairing dump wagons	25.00
Rope for flag poles on buildings	104.76
Repairing road grader	17.05
Cooling out paddock, repairs	26.55

Repairs to boilers in dining halls		244.41	
Doctor bill for injured employes		5.00	
Nails and hardware for general repairs		71.02	
Telephone exchange, repairs		78.21	
Total maintenance grounds and buildings			8,284.47
Improvements and permanent repairs:			
Light system extensions		$ 512.58	
Streets, cinders and permanent grading		751.40	
Walks and curbing		84.12	
Tools and implements:			
Little Wonder track harrow	$ 47.50		
Paper press	15.50		
Hammers, saws and squares	17.05		
Roof, jacks for painting	3.00		
Set of dies	4.40		
Ladders	16.00		
Miscellaneous small tools	102.85		
		206.30	
Fair Ground equipment:			
Harness for mule team	$ 61.00		
Three allied flags	57.15		
Napkin vending machines	90.00		
Ticket boxes	30.00		
Garden hose	26.05		
Cash register	25.00		
Large umbrellas for entrances	3.00		
Wheel barrows	54.00		
Steel cable, for staging	27.52		
Cots and mattresses, horse barn office	99.90		
Water coolers	16.00		
Kitchen tables for stages	4.00		
Money tills, concession department	.90		
		494.52	
Real estate purchased		12,032.25	
Women and Children's building:			
Oiling floors and painting	$ 138.16		
Screening south porch	173.20		
Eave trough on high roof	208.08		
Repairing gravel roof	75.70		
Rubberoid matting for porches	81.78		
Plumbing, changes and repairs	116.42		
Table for baby health department	18.00		
Light for art gallery	33.00		
		844.34	
Ice house, new roof		10.00	
Sewer system extensions		128.90	
Curb and gutter, Grand avenue		53.88	
Garden fence		65.80	
Cave for storing roots and bulbs		132.92	
Valley Junction dining hall, painting		116.67	
Bleachers, painting and new dressing room		434.22	
Culvert on camp grounds road		57.11	
Privilege superintendent cottage, new roof and painting		74.61	
Horse superintendent cottage, new roof and painting		70.61	
Swine superintendent cottage, new roof and painting		77.60	
Poultry superintendent cottage, painting		28.84	
Speed superintendent cottage, painting		28.84	
Filling at Walnut street entrance and poultry building		234.25	
Speed barns, painting 12 barns		640.78	
Administration building, painting and repairs		748.56	
Toilet No. 1, near speed barns, painting		13.31	
Vaudeville stages, new floors and ballet stage		489.24	
Toilet near transformer station, painting		23.25	
Amphitheater, painting steel and recoating roof		2,707.09	
Exposition building, painting		754.58	
Boys' and Girls' Club building, painting		194.38	
Stock pavilion, painting and repairs		245.16	
Machinery hall, painting and roof repairs		1,179.97	
Hurdles, painting		24.98	
Toilet No. 3, painting		51.97	
Mines and Mining building, painting		20.77	
Amphitheater ticket booths, painting		21.03	
Swine pavilion, painting and recoating roof		3,490.31	

College building, painting and repairs	627.29	
Show cases, Exposition building, painting	10.65	
Subway, pump and pump house	395.04	
Brick dining halls, new roof and painting	961.13	
Poultry building, addition, ventilators and repairs	2,674.49	
Poultry cooping, for new addition	351.75	
Cottage, Supt. Exposition building, painting	12.92	
Toilet No. 8, painting	63.79	
Fence, outside S. W. corner and camp grounds	475.94	
Agricultural building, painting	472.54	
Toilet No. 10, painting	7.00	
Farm house, painting	86.15	
Campers' headquarters, painting	37.28	
Meat market, painting	27.86	
Cattle barn No. 1, painting woodwork	53.49	
Cattle barn No. 2, painting woodwork	51.23	
Cattle barn No. 3, frame painting	142.59	
Cattle barn No. 4, painting woodwork	49.73	
Telephone central building, painting	43.06	
Brick horse barn, painting and repairs	704.16	
Signs on miscellaneous buildings, labor and paint	16.01	
Postoffice, painting	37.11	
Hospital painting	67.61	
Grocery store, painting	43.38	
Fire station, painting	26.68	
Street car station, painting structural steel	116.04	
Horse barns, frame, painting fronts	198.97	
Cattle barn No. 14, painting front	9.92	
Cattle barn No. 15, painting front	9.92	
Iowa Crop building, painting	25.18	
Band stand, painting	53.00	
Walnut street entrance, new	1,296.94	
Toilet No. 5, painting	40.98	
Bennett dining hall, painting front	1.75	
Barber shop, painting	20.43	
Grand avenue entrance, new gate posts	100.50	
Ticket booths, Grand avenue painting	10.50	
Portable bleachers, painting	10.00	
Garrison dining hall, painting and repairs	13.75	
Steel flag pole, new	444.43	
Toilets, miscellaneous painting and repairs	128.23	
Sheep barn, installing shower baths	121.72	
Garbage cans, new	34.20	
Water system, new pipe and fittings	161.54	
Office furniture	14.00	
Administration building furnishings	166.45	
Light system, carbon lamps	502.43	
Lumber for miscellaneous repairs	316.62	
Lumber used in seats and auto show taken to yard	421.58	
Speed barn office, shutters and paint	21.54	
Binding tree with large bolts	4.44	
Garage of superintendent, painting	5.02	
Telephone exchange, extensions	39.67	
Total improvements and permanent repairs		$ 38,773.77

Expense of Fair other than premiums:

Executive committee meetings	$ 887.80
Special committee meetings	1,641.79
Express, telegraph and telephone	369.64
Postage	1,441.60

Printing:

16,000	Boys' camp circulars	$ 59.25
500	Christmas cards	30.00
800	blanks for list of exhibitors at fairs	5.00
11,300	1916 letter heads, patched	8.25
1,000	premium list adv. circulars	5.00
1,000	premium list adv. contracts	3.00
2,000	cattle barn circulars	19.75
450	plats of buildings and grounds	4.30
4,000	educational premium lists	54.00
10,250	premium list envelopes	33.96
750	applications, outside machinery space	5.25
500	applications, floor space machinery department	4.45

2,000	boys' judging contest circulars	10.00
750	advance sheets, machinery dept.	3.15
2	entry books	24.75
1,000	gummed strips of labels	6.50
3,000	speed programs	32.00
800	entry blanks and classification speed department	9.00
1,500	grandstand and outside gate ticket reports	11.40
3,600	premium statements	15.25
2	ledgers, machinery dept.	17.00
4	contract books, conc. dept.	11.35
13	contract books, machinery dept.	11.95
11,000	entry blanks and circulars draft horse futurity	38.75
10,000	entry blanks, all departments	45.00
2,500	premium warrants	26.25
2,000	expense warrants	21.00
14,350	race programs, one-half cost	70.31
2	check books, 500 to book	2.25
750	judging programs, horse dept.	27.50
500	record slips for turnstiles	4.20
250	plats, concession grounds	3.50
25	gatekeeper duplicate report books	6.00
75	feed barn, duplicate order books	12.50
1,000	exhibitor's certificates for refund of freight	3.90
500	classification Graphic & Plastic Arts department	6.75
1,000	entry blanks and classification baby health department	11.00
300	auto race cards	16.50
9,000	cards for making up catalog	14.75
300	booklets Iowa State Fair futurity entries	37.40
400	large daily programs	70.50
500	judge's sheets, swine and sheep departments	9.75
1,000	statement of premium account	4.25
24,450	entry tags	52.67
7,100	multigraph letters	43.60
1,000	judge's sheets, poultry dept.	12.00
12,000	premium lists	1,238.00
1,250	report cards, account of painting	12.00
1,500	16 page list of words for spelling contest	42.90
1,000	list of entries, speed dept.	50.00
1,200	index cards, live stock entries	5.00
600	index cards, machinery dept.	2.50
1,000	sets of order blanks	7.00
400	warning placards	15.00
10	large 4 on receipt books	13.35
1	large record book	40.00
12,860	stall, ring and concession numbers	130.00
1,000	grandstand ticket receipts	3.00
1,200	premium warrant enclosures	9.00
500	expense warrant enclosures	3.75
2,000	shipping tags	7.00
50	placards, cash admission	8.75
300	invitations, baby party	9.00
200	no parking placards	13.50
450	invitations and envelopes	20.00
300	newspaper news items	3.00
1	set poultry coop numbers	12.00
250	placards "notice to campers"	12.00
300	boys' judging contest pads	8.50
5,000	variety cards, horticultural dept.	5.00
500	receipts for exposition dept.	3.00
500	entry cards, baby health dept.	3.25
1,000	bill heads	8.75
6,000	premium tags	24.00
100	small receipt books in duplicate.	9.50
11	treasurer's receipt books in duplicate	16.00
2,000	20 page catalogs, B. H. dept.	68.00
4,000	programs, Sunday music	26.00
100	race record cards	4.00

3,000 programs, model Sunday school	34.00	
10,000 night horse show programs	50.00	
500 coin bag tags	2.00	
100 cards, business publicity dept.	1.25	
Tickets for all gates and side shows	902.20	
		3,747.09
Half tones and zinc etchings		61.92
Advertising:		
Country weekly papers	$ 3,745.05	
Plate matter for country papers	1,026.25	
Daily papers outside Des Moines	388.30	
Des Moines daily papers	3,578.15	
Agricultural, live stock & breed papers	1,475.14	
Horse papers, adv. speed program	633.63	
Misc. papers and magazines	106.50	
Implement and machinery papers	142.00	
Supt. advertising, salary 5 months	625.00	
Stenographer & clerk, salary 5 months	450.00	
Printing 90,000 Greater Iowa	778.57	
Postage on Greater Iowa	45.12	
Drayage on Greater Iowa	16.00	
8,500 hangers and window cards	1,027.98	
Billboard service	787.14	
Billboard paper and dates	102.26	
Distributing adv. matter	31.50	
Cuts and electros	156.15	
22,000 letter inserts	140.00	
Membership Co-operative Pub. Bureau	200.00	
Advertising caps	40.00	
Advertising in Western Breeders' sale catalog	25.00	
Newspaper clipping service	36.00	
Newspaper advertising contracts	8.85	
Photos, 1917 fair	153.25	
Total cost advertising		15,717.84
Office supplies, stationery, etc.		412.26
Music and attractions:		
Night show, "War of Nations"	$ 7,000.00	
Thaviu's band and Russian ballet	3,700.00	
Fischers' Burlington band	1,100.00	
Henry and his band	1.320.00	
Iowa div. national drum corp	340.00	
Keota ladies' band	230.00	
Unkrich's boys' band, Fairfield	228.00	
Royal Kealakai Hawaiians	468.96	
Graham's orchestra	178.00	
Boys' band, Davenport, trans. only	91.00	
Newton band, transportation only	42.00	
Chicago grand opera quartette	400.00	
Eight hippodrome acts	4,400.00	
Auto polo	1,800.00	
Tableau, "The Call to the Colors"	250.00	
Transportation for soldiers	84.00	
		21,631.96
Auto races, prizes and bonuses		4,335.00
Light and power (current)		829.78
Light and power (labor)		758.59
Water		542.49
Refund stall rent, tickets, etc.		208.25
Forage purchased		14,469.05
Salaries, secretary and assistants		7,109.46
Board meetings, account of fair		302.10
Asst. and foreman, grounds dept.		680.50
Sanitary department		1,014.50
Track work during fair		147.78
Streets, oiling and dragging		660.20
Cleaning and preparing grounds and buildings		2,088.59
Decorating all buildings and halls		907.48
Payroll, Public Safety department		4,729.94
Payroll, Admissions department		2,865.50
Payroll, Treasurer's department		1,504.50
Payroll, Concession department		2,155.25
Payroll, Speed department		765.65
Payroll, Horse department		1,710.70

Payroll, Cattle department	1,280.79	
Payroll, Swine department	622.25	
Payroll, Sheep department	483.00	
Payroll, Poultry department	425.89	
Payroll, Machinery department	747.30	
Payroll, Agricultural department	748.30	
Payroll, Horticultural department	285.92	
Payroll, Floricultural department	132.50	
Payroll, Textile and China department	453.73	
Payroll, Educational and Boys' and Girls' Club dept.	641.50	
Payroll, Ticket Auditing department	392.35	
Payroll, Graphic and Plastic Art department	212.50	
Payroll, Publicity and Awards department	110.00	
Payroll, Property men	220.40	
Payroll, Boys' Judging contest	60.80	
Payroll, Janitor's, Administration building	273.75	
Payroll, Janitors, W. and C. building	610.50	
Payroll, Baby Health department	906.54	
Payroll, Child Welfare and Day nursery	216.63	
Payroll, Program Committee and matron W. & C. bldg.	187.32	
Expense Boys' State Fair camp	1,725.81	
Expense program W. & C. building	155.00	
Payroll, Dairy and Ice Cream department	1,293.91	
Expense reproducing Horn of Plenty	1,260.45	
Expense Rural School department	12.20	
Expense Cow Test Assn. exhibit	191.78	
Expense of Sunday school	60.03	
Panorama photos, moving pictures and framing	188.55	
Plants and flowers and gardener	500.92	
Labor on experimental garden	82.53	
Freight and drayage	171.26	
Plowing demonstration ground	150.00	
Placing and removing amp. chairs	31.00	
Water system temporary extensions to concessions	101.30	
Building and wrecking auto show annex	221.50	
Sprinkling streets and midway	88.00	
Hanging awnings on stock pavilion	22.50	
Washing dishes, Agricultural and Horticultural halls	22.26	
Miscellaneous labor during fair	1,422.95	
Care of camp ground lights	46.50	
Mechanic repairing locks and turnstiles	131.75	
Firemen and coal for dining halls	305.99	
Ring attendants, stock pavilion	60.00	
Expense securing sheep for shearing contest	23.00	
Closing buildings	213.20	
Meals for guests and state day banquet	444.75	
Premium ribbons and badges	1,238.02	
Rental tents, cots, bedding, chairs, etc.	1,347.25	
Gasoline for autos and camp ground lights	104.41	
Signs for buildings, night shows and exhibits	417.05	
Feed for poultry on exhibition	165.60	
Cups, medals and engraving	566.45	
Typewriter rental, for press office	6.50	
Expense of loan art exhibit	122.48	
Laundry bill, club dining hall and day nursery	28.09	
Membership American Trotting Association	100.00	
Rent on field reserved for aviation	32.00	
Damages paid to exhibitor in art department	10.00	
Uniforms for propertymen	8.50	
Expense sending circulars to gardeners	18.43	
Annual dues American Association of Fairs	35.00	
Brooms for cleaning barns, walks and buildings	163.00	
Sanitary napkins	80.00	
Fly poison and tanglefoot	17.00	
Lime for toilets	5.10	
Toilet paper	197.50	
Sweeping compound	11.25	
Mantles for camp ground lights	17.28	
Miscellaneous ground supplies	266.51	
Office supplies for superintendents	110.11	
Mimeograph paper and supplies	50.95	
Bunting for decorating	94.17	
Supplies for matron W. & C. Building	6.85	
Premium on Assistant Treasurer's bonds	49.00	
Telephone exchange, labor installing phones	186.49	
Expense of fair other than premiums		$117,091.31

Cash premiums paid:

Horses	$13,385.00	
Cattle	15,618.25	
Swine	6,433.00	
Sheep	4,039.00	
Poultry	1,200.00	
Agriculture	6,360.50	
Pantry and kitchen	735.50	
Honey and bees	414.00	
Dairy	657.00	
Horticulture	2,086.25	
Floriculture	1,553.80	
Textile and china	1,225.00	
Graphic and plastic arts	648.00	
Educational	1,442.00	
State spelling contest	100.00	
Speed premiums	16,544.77	
Total premiums paid		$ 72,442.07
Total expense of fair		$189,533.38
Grand total disbursements		$268,471.89

SUMMARY OF RECEIPTS AND DISBURSEMENTS AND RECONCILIATION OF ACCOUNTS WITH TREASURER.

RECEIPTS.

Cash balance December 1, 1916		$ 3,998.17
Receipts from sources other than fair		42,173.36
Receipts of fair other than ticket sales	$ 83,323.36	
Receipts from ticket sales	173,799.20	
Total receipts of fair		$257,122.56
Grand total receipts		$303,294.09

DISBURSEMENTS.

Disbursements other than fair or improvements		$ 31,880.27	
Expense of fair other than premiums	$117,091.31		
Cash premiums paid	72,442.07		
Total cost of fair		$189,533.38	
Cost of permanent improvements and repairs		38,773.77	
Cost of maintenance of grounds and buildings		8,284.47	
Total disbursements			$268,471.89
Balance on hand November 30, 1917			$ 34,822.20
Warrants outstanding			293.49
Cash balance in treasury November 30, 1917			$ 35,115.69

COMPARATIVE STATEMENT OF TICKET SALES AT OUTSIDE GATES, DAY AND NIGHT AMPHITHEATER AND STOCK PAVILION NIGHT SHOW FOR THE 1916 AND 1917 FAIRS.

General Admission	1917 Fair			1916 Fair		
	Price	Number sold	Total value	Price	Number sold	Total value
Outside Gates—						
General admission	$ .50	177,133	$ 88,566.50	$ .50	141,569	$70,784.50
Gen. admis. after 5 p. m.	.25	21,135	5,283.75	.25	18,011	4,502.75
Children and half fares	.25	41,360	10,340.00	.25	31,067	7,766.75
Des Moines Day keys	------	--------	----------	.50	1,268	634.00
Campers' roundup	.50	6,477	3,238.50	.50	5,472	2,736.00
Campers	.40	7,275	2,910.00	.40	7,075	2,830.00
Exhibitors	.36	9,091	3,318.00	.35	9,381	3,326.00
Auto tickets	5.00	37	185.00	5.00	7	35.00
Over cash turnstiles	------	--------	11.20	------	--------	34.50
Total paid admissions	------	262,471	$113,852.95	------	213,850	$92,649.50
Day Amphitheater—						
Bleachers or paddock	$ .25	30,371	$ 7,592.75	$ .25	18,522	$ 4,630.50
Quarterstretch	.25	3,108	777.00	.25	2,088	522.00
Reserved seats	.50	38,598	19,299.00	.50	29,859	14,929.50
Reserved box seats	.75	2,171	1,628.25	.75	2,178	1,633.50
Total day amphitheater	------	74,248	$ 29,297.00	------	52,647	$21,715.50
Night Amphitheater—						
Bleachers or paddock	$ .25	42,173	$ 10,543.25	$ .25	32,440	$ 8,110.00
Reserved seats	.50	30,090	15,045.00	.50	22,578	11,289.00
Reserved box seats	.75	1,844	1,383.00	.75	1,683	1,262.25
Total night amphitheater	------	74,107	$ 26,971.25	------	56,701	$20,661.25
Stock Pavilion, Night—						
Reserved seats	$ .50	7,095	$ 3,547.50	$ .50	6,140	$ 3,070.00
Standing room	.25	522	130.50	------	174	43.50
Total stock pavilion	------	7,617	$ 3,678.00	------	6,314	$ 3,113.50

SUMMARY.

	1917	1916	Increase
Outside gates	$113,852.95	$ 92,649.50	$21,203.45
Day amphitheater	29,297.00	21,715.50	7,581.50
Night amphitheater	26,971.25	20,661.25	6,310.00
Stock pavilion	3,678.00	3,113.50	564.50
Total	$173,799.20	$138,139.75	$35,659.45

COMPARATIVE STATEMENT OF RECEIPTS, 1916 AND 1917 FAIRS.

	1917	1916	Increase	Decrease
Horse department	$ 1,362.00	$ 1,708.00	$----------	$ 346.00
Cattle department	1,203.00	1,545.00	----------	342.00
Swine department	1,139.00	1,101.00	38.00	---------
Sheep department	196.00	170.00	26.00	---------
Poultry department	638.50	673.00	----------	34.50
Machinery department	5,677.65	6,181.46	----------	503.81
Agricultural department	1,380.00	1,035.00	345.00	---------
Dairy department	2,229.70	2,041.20	188.50	---------
Exposition department	2,935.00	2,770.00	165.00	---------
Concession department	33,667.04	25,416.85	8,250.19	---------
Speed department	7,904.34	3,812.06	4,092.28	---------
Forage department	14,942.85	9,360.20	5,582.65	---------
Association special premiums	7,819.79	5,487.65	2,332.14	---------
Adv. in premium list	1,175.00	1,212.50	----------	37.50
Telephone exchange	445.63	388.81	56.82	---------
Light and power sold	409.23	307.98	101.25	---------
Miscellaneous receipts	198.63	31.50	167.13	---------
Ticket sales—				
Outside gates	113,852.95	92,649.50	21,203.45	---------
Day amphitheater	29,297.00	21,715.50	7,581.50	---------
Night amphitheater	26,971.25	20,661.25	6,310.00	---------
Stock pavilion	3,678.00	3,113.50	564.50	---------
Totals	$257,122.56	$201,381.96	$57,004.41	$1,263.81

Net increase $55,740.60.

COMPARATIVE STATEMENT OF PREMIUMS PAID 1916 AND 1917 FAIRS.

Department	1917	1916	Increase	Decrease
Horses	$ 13,385.00	$ 14,412.00	$----------	$1,027.00
Cattle	15,618.25	15,176.00	442.25	---------
Swine	6,433.00	4,570.00	1,863.00	---------
Sheep	4,039.00	3,757.00	282.00	---------
Poultry	1,200.00	1,408.00	----------	208.00
Agriculture	6,360.50	6,803.00	----------	442.50
Pantry and kitchen	735.50	707.50	28.00	---------
Honey and Bees	414.00	491.00	----------	77.00
Dairy	657.00	652.00	5.00	---------
Horticulture	2,086.25	1,905.00	181.25	---------
Floriculture	1,553.80	1,447.40	106.40	---------
Textile and China	1,225.00	1,114.50	110.50	---------
Graphic and Plastic Arts	648.00	662.00	----------	14.00
Educational	1,442.00	1,288.00	154.00	---------
Scholarships	----------	421.84	----------	421.84
State Spelling Contest	100.00	100.00	----------	---------
Speed premiums	16,544.77	12,145.17	4,399.60	---------
Totals	$ 72,442.07	$ 67,060.41	$ 7,572.00	$2,190.34
Total increase	----------	5,381.66	----------	5,381.66
	$ 72,442.07	$ 72,442.07	$ 7,572.00	$7,572.00

COMPARATIVE STATEMENT OF EXPENSE OTHER THAN PREMIUMS FOR THE 1916 AND 1917 FAIRS.

	1917	1916	Increase	Decrease
Executive committee meetings	$ 887.80	$ 815.50	$ 72.30	$--------
Special committee meetings	1,641.79	982.46	659.33	---------
Express, telegraph and telephone	369.64	274.27	95.37	---------
Postage	1,441.60	1,379.00	62.60	---------
Printing	3,809.01	3,048.54	760.47	---------
Advertising	15,717.84	14,310.39	1,407.45	---------
Supplies, stationery, etc.	412.26	493.08	----------	80.82
Music and attractions	21,631.96	20,336.08	1,295.88	---------
Auto races, prizes and bonuses	4,335.00	3,464.50	870.50	---------
Light and power (current)	829.78	818.99	10.79	---------
Light and power (labor)	758.59	699.62	58.97	---------
Water	542.49	541.49	1.00	---------
Refund stall rent, tickets, etc.	208.25	362.25	----------	154.00
Forage purchased	14,469.05	8,099.33	6,369.72	---------
Salaries, secretary and assistants	7,109.46	7,167.19	----------	57.73
Board meetings	302.10	361.00	----------	58.90
Assts. and foreman, grounds dept.	680.50	579.25	101.25	---------
Sanitary department	1,014.50	1,069.12	----------	54.62
Track work	147.78	71.25	76.53	---------
Streets, oiling and dragging	660.20	553.32	106.88	---------
Cleaning and preparing grounds and buildings	2,088.59	1,372.18	716.41	---------
Decorating buildings	907.48	784.00	123.48	---------
Payroll, Public Safety department	4,729.94	4,346.39	383.55	---------
Payroll, Admissions dept.	2,865.50	2,812.00	53.50	---------
Payroll, Treasurer's dept.	1,504.50	1,542.00	----------	37.50
Payroll, Concession dept.	2,155.25	1,738.50	416.75	---------
Payroll, Speed dept.	765.65	710.50	55.15	---------
Payroll, Horse dept.	1,710.70	1,585.00	125.70	---------
Payroll, Cattle dept.	1,280.79	1,312.75	----------	31.96
Payroll, Swine dept.	622.25	572.20	50.05	---------
Payroll, Sheep dept.	483.00	386.00	97.00	---------
Payroll, Poultry dept.	425.89	433.81	----------	7.92
Payroll, Machinery dept.	747.30	697.30	50.00	---------
Payroll, Agricultural dept.	748.30	634.15	114.15	---------
Payroll, Horticultural dept.	285.92	248.80	37.12	---------
Payroll, Floricultural dept.	132.50	119.00	13.50	---------
Payroll, Textile and China dept.	453.73	419.20	34.53	---------
Payroll, Educational & Boys' & Girls' Club dept.	641.50	588.80	52.70	---------
Payroll, Ticket Auditing dept.	392.35	355.00	37.35	---------
Payroll, Graphic and Plastic Arts dept.	212.50	179.34	33.16	---------
Payroll, Publicity and Awards dept.	110.00	100.00	10.00	---------
Payroll, Property men	220.40	183.15	37.25	---------
Payroll, Boys' Judging Contest	60.80	57.40	3.40	---------
Payroll, Janitors Adm. bldg.	273.75	237.50	36.25	---------
Payroll, Janitors W. & C. bldg.	610.50	270.00	340.50	---------
Payroll, Baby Health dept.	906.54	631.65	274.89	---------
Payroll, Child Welfare and Day nursery	216.63	----------	216.63	---------
Payroll, Program Com. W. & C. bldg.	187.32	127.00	60.32	---------
Expense Boys' State Fair camp	1,725.81	1,509.98	215.83	---------
Expense Program W. & C. building	155.00	231.92	----------	76.92
Payroll, Dairy and Ice Cream dept.	1,293.91	1,143.95	149.96	---------
Expense reproducing Horn of Plenty	1,260.45	2,734.31	----------	1,473.86
Expense acct. model Sunday school	60.03	38.40	21.63	---------
Plants and Flowers	500.92	521.77	----------	20.85
Freight and Drayage	171.26	204.57	----------	33.31
Plowing Demonstration grounds	150.00	150.00	----------	---------
Water system	101.30	225.80	----------	124.50
Miscellaneous labor during fair	1,422.95	1,328.28	94.67	---------
Ground supplies	1,019.72	415.69	604.03	---------
Premium ribbons, badges, etc.	1,238.02	1,153.30	84.72	---------
Rental tents, cots, bedding etc.	1,347.25	1,466.95	----------	119.70
Cups and engraving	566.45	546.71	19.74	---------
Miscellaneous signs for buildings and exhibits	417.05	408.45	8.60	---------
Firemen and coal for dining halls	305.99	153.91	152.08	---------
All other items of expense	2,646.02	2,033.21	612.81	---------
Total expense of fair other than premiums	$117,091.31	$102,137.45	$17,286.45	$2,332.59

Increase $14,953.86.

SPEED DEPARTMENT, IOWA STATE FAIR AND EXPOSITION.
SUMMARY REPORT, 1917.

Class	Amount of purse	Amount paid	Entry fees	Net cost	No. of starters
HARNESS RACES.					
*2-year-old trot	$ 500.00	$ 400.00	$ 245.00	$ 155.00	4
2:25 trot	800.00	640.00	216.00	424.00	8
2:20 trot	800.00	640.00	168.00	472.00	7
2:16 trot	800.00	640.00	168.00	472.00	7
*2:15 trot	3,000.00	2,400.00	1,650.00	750.00	11
2:10 trot	1,000.00	820.00	180.00	640.00	6
2:15 saddle trot	300.00	300.00	---------	300.00	5
2:12 team trot	500.00	500.00	---------	500.00	3
*2-year-old pace	400.00	320.00	120.00	200.00	6
2:25 pace	700.00	560.00	126.00	434.00	6
2:18 pace	700.00	560.00	147.00	413.00	6
*2:15 pace	3,000.00	2,400.00	2,400.00	---------	12
2:13 pace	700.00	560.00	189.00	371.00	9
2:10 pace	700.00	525.00	63.00	462.00	3
Free-for-all pace	1,000.00	775.00	120.00	655.00	4
Free-for-all team pace	500.00	---------	---------	---------	----
Total	$15,400.00	$12,040.00	$5,792.00	$6,248.00	97
Futurities					
Iowa State Fair No. 2 (Trotting division)	$ 1,116.38	$ 1,116.38	$ 416.38	$ 700.00	5
Iowa State Fair No. 2 (Pacing division)	478.45	478.45	178.45	300.00	2
W. B. Futurity No. 4 (Trotting division)	980.59	980.59	980.59	---------	3
W. B. Futurity No. 4 (Pacing division)	229.41	229.41	229.41	---------	1
Bonus, W. B. Futurity	---------	---------	---------	350.00	----
Total	$ 2,804.83	$ 3,154.83	$1,804.83	$1,350.00	11
RUNNING RACES.					
1 mile run	$ 200.00	$ 200.00	$ 50.00	$ 150.00	5
1 mile run	200.00	200.00	30.00	170.00	3
6 furlong run	150.00	150.00	22.50	127.50	3
6 furlong run	150.00	150.00	37.50	112.50	5
5 furlong run	150.00	150.00	37.50	112.50	5
5 furlong run	150.00	150.00	37.50	112.50	5
5 furlong run	150.00	150.00	37.50	112.50	5
4½ furlong run	100.00	100.00	30.00	70.00	6
4½ furlong run	100.00	100.00	25.00	75.00	5
Total	$ 1,350.00	$ 1,350.00	$ 307.50	$1,042.50	42
Totals for harness races	$18,204.83	$15,194.83	$7,596.83	$7,598.00	108
Grand Totals	$19,554.83	$16,544.83	$7,904.33	$8,640.50	150

*Early closing events.

The following is the attendance of the 1917 fair, by days, compared with 1910, 1911, 1912, 1913, 1914, 1915 and 1916 fairs:

	1917	1916	1915	1914	1913	1912	1911	1910
Wednesday	6,098	4,871	3,112	4,537	3,849	--------	--------	--------
Thursday	10,435	9,004	7,610	9,886	8,608	3,090	4,074	--------
*Friday	38,079	30,671	27,722	27,613	33,020	7,503	6,063	4,956
†Saturday	29,771	29,853	17,158	27,999	26,861	27,957	27,957	30,512
Sunday	28,719	24,236	14,190	22,200	25,211	18,902	17,612	16,062
Monday	43,649	46,983	35,085	41,229	58,045	40,602	37,309	25,355
Tuesday	65,292	59,936	47,501	39,612	66,465	60,379	64,699	52,208
Wednesday	66,735	49,033	44,103	46,496	40,972	58,643	60,580	57,918
Thursday	38,351	24,270	31,955	31,523	17,431	38,831	34,117	31,854
Friday	22,169	13,115	16,630	21,978	--------	16,116	18,173	12,368
Totals	349,298	291,972	245,066	273,073	280,462	272,023	270,082	231,233

*Children's day, 1913-1914-1915-1916.
†Children's day, 1910-1911-1912.

ADMISSIONS TO GRAND STAND, AFTERNOON AND EVENING, 1917, COMPARED WITH 1914, 1915 AND 1916.

	1917 Fair		1916 Fair		1915 Fair		1914 Fair	
	Day admissions	Night admissions	Day admissions	Night admissions	Day admissions	Night admissions	Day admissions	Night admissions
Friday	9,644	8,509	3,824	6,005	3,237	4,202	3,570	5,243
Saturday	5,907	7,279	8,084	6,660	2,164	1,021	5,406	5,921
Monday	9,721	15,038	11,432	16,574	8,227	10,328	10,883	9,151
Tuesday	13,528	20,182	13,161	16,844	10,001	12,546	7,922	8,018
Wednesday	20,502	18,659	10,596	12,533	9,381	11,248	12,927	11,741
Thursday	8,713	9,779	3,055	*	6,552	8,450	8,506	7,295
Friday	12,304	--------	5,506	--------	6,691	--------	13,174	--------
Totals	80,319	79,446	55,658	58,616	46,253	47,795	62,388	47,369

*Show called off on account of rain.

ADMISSION TO LIVE STOCK AND HIPPODROME SHOW, 1917, COMPARED WITH 1912, 1913, 1914, 1915 AND 1916.

	1917	1916	1915	1914	1913	1912
Saturday	758	942	484	806	1,042	--------
Monday	2,105	1,581	1,029	957	1,826	1,233
Tuesday	2,183	2,107	1,580	2,113	2,472	2,265
Wednesday	2,133	1,501	1,242	1,264	1,566	2,070
Thursday	1,091	667	493	605	438	1,262
Totals	8,270	6,798	4,228	5,745	7,344	6,830

The following table gives the number of exhibitors and the number of entries made in each department of the 1916 and 1917 fairs:

Department	1917 Fair		1916 Fair	
	No. of exhibitors	No. of entries	No. of exhibitors	No. of entries
Horses	104	1,302	127	1,791
Cattle	141	1,582	120	2,001
Swine	173	2,721	166	2,663
Sheep	25	756	29	605
Poultry	106	1,856	133	2,458
Agriculture	212	2,257	218	2,197
Pantry	183	2,340	155	2,215
Dairy	91	91	82	82
Horticulture	32	1,301	38	1,290
Floriculture	30	384	27	391
Textile, China, etc.	287	2,890	295	2,291
Graphic and Plastic Arts	45	157	52	162
Educational	260	1,555	192	1,044
Machinery and Implements	294	--------	310	--------
Totals	1,983	19,192	1,954	19,190

The following tabulation gives the number of exhibitors and the number of horses, ponies and mules entered, and the actual number shown at the 1916 and 1917 fairs:

Breed	1917 Fair			1916 Fair		
	No. of exhibitors	No. of horses entered	No. of horses shown	No. of exhibitors	No. of horses entered	No. of horses shown
Percheron	32	143	121	32	197	162
Clydesdale	14	71	55	13	86	70
Shire	11	45	38	15	82	67
Belgian	15	145	105	16	158	122
Draft Geldings and Mares	15	36	29	30	70	40
Standard Bred and Show Horses	19	112	*102	16	52	*103
Saddle Horses	--------	--------	--------	16	70	--------
Hunters and Jumpers	--------	--------	--------	4	11	--------
Morgans	6	24	11	3	21	17
Hackney	4	8	7	5	12	11
Shetland Ponies	9	93	81	13	127	121
Welsh Ponies	2	16	15	5	26	11
Hackney Ponies and others	7	16	16	9	26	24
Mules	1	20	20	3	28	13
Jacks	2	9	4	4	6	6
Totals	*a* 104	738	604	*a* 127	972	767

*Includes all light harness horses, saddle horses, and hunters and jumpers.

a No. individual exhibitors.

The following tabulation gives the number of cattle exhibitors and the number of cattle entered by breeds, and the actual number of cattle shown at the 1916 and 1917 fairs:

Breed	1917 Fair			1916 Fair		
	No. of exhibitors	No. of cattle entered	No. of cattle shown	No. of exhibitors	No. of cattle entered	No. of cattle shown
Short Horn	34	289	251	43	361	322
Hereford	14	158	135	15	185	144
Aberdeen Angus	8	103	89	9	159	134
Galloway	1	12	12	3	36	36
Polled Durham	2	26	24	9	72	58
Red Polled	3	43	41	6	93	93
Holstein	9	117	89	18	137	133
Jersey	7	98	74	4	56	56
Guernsey	2	15	14	5	80	73
Ayrshire	3	61	59	4	83	83
Brown Swiss	1	16	16	3	48	31
Board of Control Cattle	1	44	44	1	40	40
Baby Beeves	56	68	60	--------	--------	--------
Totals	141	1,050	908	120	1,350	1,203

The following tabulation gives the number of exhibitors and number of swine entered by breeds and the actual number of swine shown at the 1916 and 1917 fairs:

Breed	1917 Fair			1916 Fair		
	No. of exhibitors	No. of swine entered	No. of swine shown	No. of exhibitors	No. of swine entered	No. of swine shown
Duroc Jersey	61	970	882	50	761	682
Poland China	43	535	485	53	689	649
Chester White	35	490	453	34	572	473
Hampshire	14	280	255	16	381	351
Berkshire	5	55	45	4	99	63
Yorkshire	2	71	61	6	123	109
Tamworth	5	135	127	2	18	9
Mule Foot	2	66	66	1	20	20
Spotted Poland China	6	119	100	--------	--------	--------
Totals	173	2,721	2,474	166	2,663	2,856

The following table sets forth the amount of cash premiums paid in all

	1917	1916	1915	1914	1913
Horses	$ 13,385.00	$ 14,412.00	$ 17,364.00	$ 18,537.50	$ 15,612.50
Cattle	15,618.25	15,176.00	14,120.00	12,673.25	12,623.00
Swine	6,433.00	4,570.00	4,188.00	4,499.00	4,404.00
Sheep	4,039.00	3,757.00	3,375.00	2,779.00	2,317.00
Poultry	1,200.00	1,408.00	1,047.00	1,036.50	1,172.50
Agriculture	6,360.50	6,803.00	6,672.00	5,398.00	4,173.00
Pantry and kitchen	1,149.50	1,198.50	1,214.50	1,251.00	1,215.00
Dairy	657.00	652.00	652.00	652.00	602.00
Horticulture	2,086.25	1,905.00	1,759.75	1,680.00	1,614.00
Floriculture	1,553.80	1,447.40	1,575.00	1,535.60	1,439.40
Textile and China	1,225.00	1,114.50	1,150.00	1,183.00	1,658.50
Graphic and plastic arts	648.00	662.00	554.00	561.00	----------
Educational department	1,442.00	1,288.00	1,133.00	931.00	665.00
Scholarships	----------	421.84	475.00	425.00	650.00
Speed premiums	16,544.77	12,145.17	14,319.50	13,283.00	12,620.00
Dog show	----------	----------	----------	----------	----------
*Baby health department	----------	----------	----------	----------	----------
State spelling contest	100.00	100.00	----------	----------	----------
Total premiums	$ 72,442.07	$ 67,060.41	$ 69,598.75	$ 66,424.85	$ 61,069.90

*Cups and medals given in place of cash prizes since 1912.

CONDENSED FINANCIAL STATEMENT OF THE STATE AND 1901 TO 1917,

Showing Receipts and Disbursements of Iowa State Fair and Other Improvements, Repairs, Etc., and Net Profit

	Receipts						Disbursements	
	Cash balance beginning of year	From state fair	From state appropriation	From other sources	Total receipts for year	Grand total	Premiums paid	Other fair expenses
1896	$ 116.79	$ 36,622.10	$ 7,000.00	$ 6,710.22	$ 50,332.32	$ 50,449.11	$ 16,404.29	$ 15,351.06
1901	28,616.55	50,712.91	1,000.00	2,753.82	54,466.73	83,083.28	19,203.83	13,925.87
1902	34,244.93	63,084.71	38,000.00	3,037.06	104,121.77	138,366.70	21,736.31	20,073.34
1903	30,372.25	59,838.56	1,000.00	3,140.79	63,979.35	94,351.60	23,813.13	21,989.56
1904	28,963.11	66,100.36	48,000.00	2,622.03	116,722.39	145,685.50	24,691.68	28,485.42
1905	29,657.23	84,786.25	1,000.00	2,840.92	88,627.17	118,284.49	28,730.89	34,408.62
1906	39,976.34	110,929.85	1,000.00	3,717.16	115,647.01	155,623.35	31,703.94	40,315.60
1907	50,294.87	104,356.75	76,000.00	5,452.34	185,908.09	236,103.96	35,504.79	43,647.20
1908	35,227.90	138,764.66	1,000.00	3,262.95	143,027.61	178,355.51	38,744.56	55,848.65
1909	25,328.73	137,307.40	101,000.00	5,257.42	243,564.82	268,893.55	42,262.76	66,963.12
1910	4,985.25	157,259.77	1,000.00	14,658.30	171,918.07	176,903.32	49,717.50	80,513.68
1911	7,283.44	179,549.67	78,000.00	5,275.72	262,825.39	270,108.83	56,264.35	81,603.16
1912	18,036.99	185,701.21	8,000.00	14,579.82	208,281.03	226,318.02	58,139.15	85,829.74
1913	615.63	188,832.10	30,786.81	17,211.86	236,830.77	237,446.40	61,069.90	85,670.12
1914	18,505.82	188,644.66	51,268.19	32,799.93	272,712.78	291,218.60	66,024.85	104,411.33
1915	968.73	165,604.40	36,666.73	51,949.80	264,220.93	265,189.66	69,598.75	101,561.38
1916	100.63	201,381.96	9,133.27	3,366.59	247,165.32	247,265.95	67,060.41	102,137.45
1917	3,998.17	257,122.56	24,832.25	17,341.11	299,295.92	303,294.09	72,442.07	117,091.31

departments of the fair for a period of ten years.

	1912	1911	1910	1909	1908
Horses	$ 14,940.00	$ 14,184.00	$ 10,381.00	$ 7,273.00	$ 6,046.00
Cattle	11,738.00	12,061.00	11,778.00	10,153.00	8,848.26
Swine	4,042.00	3,640.00	4,135.00	3,035.00	3,168.00
Sheep	2,306.00	2,388.00	2,146.00	2,057.00	1,939.00
Poultry	1,112.50	1,042.00	1,036.00	988.50	795.50
Agriculture	4,059.00	3,524.00	3,074.00	2,976.50	2,932.50
Pantry and kitchen	1,092.50	856.50	798.00	793.00	756.50
Dairy	627.00	627.00	602.00	596.81	602.00
Horticulture	1,139.25	1,115.75	892.00	907.25	860.50
Floriculture	1,382.40	1,278.60	945.00	884.20	815.80
Textile and China	1,662.50	1,744.50	1,753.00	1,812.50	1,786.50
Graphic and plastic arts	----------	----------	----------	----------	----------
Educational department	430.00	493.00	422.00	261.00	----------
Scholarships	650.00	850.00	1,000.00	1,000.00	500.00
Speed premiums	12,360.00	12,310.00	10,755.00	9,190.00	9,360.00
Dog show	318.00	----------	----------	----------	----------
*Baby health department	280.00	----------	----------	----------	----------
State spelling contest	----------	----------	----------	----------	----------
Total premiums	$ 58,139.15	$ 56,114.35	$ 49,717.50	$ 41,927.76	$ 38,410.06

*Cups and medals given in place of cash prizes since 1912.

DEPARTMENT OF AGRICULTURE FOR YEARS OF 1896 INCLUSIVE.

Sources and Expenditures, together with Amount Expended for of Fair for Each of the Years Named.

	Disbursements					Profits of Fair		
	Improvements and permanent repairs	Maintenance of grounds and buildings	Disbursements other than for fair	Total for year	Cash on hand	Total receipts of fair	Total expenses of fair	Net profits
1896	$ 7,471.95	----------	$ 14,019.88	$ 58,247.28	$ 152.84	$ 36,622.10	$ 31,807.35	$ 4,814.75
1901	13,378.73	----------	2,313.44	48,821.87	34,244.93	50,712.91	33,129.70	17,583.21
1902	63,457.12	----------	2,608.69	107,875.46	30,372.25	63,084.71	41,809.65	21,275.06
1903	17,855.77	----------	1,704.83	65,363.29	28,963.11	59,838.56	45,802.69	14,035.87
1904	59,641.11	----------	3,195.43	116,013.64	29,657.23	66,100.36	53,177.10	12,823.26
1905	11,963.09	----------	3,345.27	78,447.87	39,976.34	84,786.25	63,139.51	21,646.74
1906	30,035.33	----------	3,385.87	105,440.74	50,394.87	110,929.85	72,459.39	38,470.46
1907	16,459.05	----------	5,043.03	200,654.07	35,327.90	104,356.75	79,151.99	25,204.76
1908	53,663.69	----------	4,975.50	153,231.98	25,328.73	138,764.66	94,593.21	44,171.45
1909	150,208.58	----------	4,379.91	263,814.37	4,985.25	137,307.40	109,225.88	28,081.52
1910	24,360.98	----------	14,740.26	169,332.42	7,283.44	157,259.77	130,231.18	27,028.59
1911	109,755.04	----------	4,429.29	252,071.84	18,036.99	179,549.67	137,867.51	41,682.16
1912	71,056.56	$ 6,575.51	4,101.43	225,702.39	615.63	185,701.21	143,968.89	41,732.32
1913	51,110.85	7,313.67	13,776.04	218,940.58	18,505.82	188,832.10	146,740.02	42,092.08
1914	100,649.13	7,564.86	11,599.70	290,249.89	968.73	188,644.66	172,113.92	16,530.74
1915	46,138.60	6,770.91	41,019.39	265,089.03	100.63	165,604.40	171,160.13	*5,555.73
1916	10,547.28	3,432.77	60,089.87	243,267.78	3,998.17	201,381.96	169,197.86	32,184.10
1917	38,773.77	8,284.47	31,880.27	268,471.89	34,822.20	257,122.56	189,533.38	67,589.18

*Loss.

STATEMENT OF INSURANCE IN FORCE ON FAIR GROUNDS BUILDINGS AND DATE OF EXPIRATION.

	Fire	Tornado	Premiums	Expiration
General form on frame buildings	$ 58,000.00	$ 58,000.00	$ 2,320.00	1919
Brick horse barns	------------	10,000.00	50.00	1919
Brick horse barns	11,500.00	14,500.00	412.54	1918
Brick cattle barn No. 1	3,000.00	3,000.00	85.00	1918
Brick cattle barn No. 2	3,000.00	3,000.00	68.25	1919
Transformer station and contents	2,000.00	1,000.00	43.00	1919
Women and Children's building	15,000.00	15,000.00	367.50	1920
Agricultural building	10,000.00	10,000.00	250.00	1920
Administration building and contents	20,000.00	15,000.00	435.38	1920
Stock pavilion	15,000.00	15,000.00	378.69	1920
Machinery hall	------------	15,000.00	75.00	1920
Swine pavilion	------------	15,000.00	75.00	1920
Grand stand	------------	10,000.00	95.50	1918
Farm house	1,500.00	1,500.00	21.87	1919
Farm barn	500.00	500.00	7.13	1919
Brick dining halls	4,000.00	2,000.00	101.66	1918
Street car station	------------	2,000.00	10.00	1919
Sheep barn	------------	13,000.00	39.00	1919
Wilkins' house	800.00	800.00	12.00	1920
Total insurance	$ 147,300.00	$204,300.00	$ 4,847.52	

REPORT OF TREASURER W. W. MORROW, AFTON, IOWA.

Mr. President and Gentlemen of the Convention:

In accordance with the wishes of the State Board of Agriculture, I present herewith a report of receipts and disbursements for the fiscal year ending November 30, 1917:

Balance on hand December 1, 1916		$ 4,762.53
Received from sale of tickets and cash turnstiles as follows:		
Cash turnstiles	$ 66,584.45	
62,985 general admission 50c tickets	31,492.50	
5,460 general admission after 5:00 p. m., 25c tickets	1,365.00	
19,038 children and half fare, 25c tickets	4,759.50	
6,477 round-up 50c tickets	3,238.50	
7,275 campers' 40c tickets	2,910.00	
37 auto for week tickets at $5.00	185.00	
30,371 day grandstand (bleachers, 25c)	7,592.75	
3.108 day grandstand (quarter-stretch, 25c)	777.00	
38,598 day grandstand (reserved seats, 50c)	19,299.00	
2,171 day grandstand (box seats, 75c)	1,628.25	
42,173 night grandstand (bleachers, 25c)	10,543.25	
30,090 night grandstand (reserved seats, 50c)	15,045.00	
1,844 night grandstand (box seats, 75c)	1,383.00	
7,095 night stock pavilion (reserved seats, 50c)	3,547.50	
522 night stock pavilion (standing room, 25c)	130.50	
1,659 exhibitors' tickets at $2.00 (sold by secretary)	3,318.00	
Total ticket sales		$173,799.20

Received from Secretary and Superintendents as follows:
Secretary's Department:

Fees stallion registration division	$ 8,676.50	
State appropriations	28,232.25	
Interest on account	276.16	
Miscellaneous receipts other than fair	3,956.68	
Superintendent of grounds	1,031.77	
Superintendent, Horse department	1,362.00	
Superintendent, Cattle department	1,203.00	
Superintendent, Swine department	1,139.00	
Superintendent, Sheep department	196.00	
Superintendent, Poultry department	638.50	
Superintendent, Machinery department	5,677.65	
Superintendent, Agricultural department	1,380.00	
Superintendent, Dairy department (ice cream sales)	2,229.70	
Superintendent, Exposition building	2,935.00	
Superintendent, Concessions and privileges	33,667.04	
Superintendent, Speed department	7,904.34	

Secretary's department:

Sale of light and power	409.23	
Sale of forage	14,942.85	
Association special premiums	7,819.79	
Advertising in premium list	1,175.00	
Miscellaneous receipts of fair	644.26	
Total receipts other than ticket sales		$125,496.72
Grand total receipts		$304,058.45

DISBURSEMENTS.

Expense warrants paid	$196,433.62	
Premium warrants paid	72,509.14	
Total disbursements	$268,942.76	
Balance on hand November 30, 1917	35,115.69	
To balance		$304,058.45

Respectfully submitted this 12th day of December, 1917.

W. W. MORROW, Treasurer.

December 1, 1917.

To the Directors of the State Board of Agriculture.

Gentlemen: This is to certify that there was on deposit in the Central State Bank, on November 30, 1917, to the credit of W. W. Morrow, Treasurer of the Iowa Department of Agriculture, the sum of $35,115.69.

Yours very truly,

GRANT MC PHERRIN, Cashier.

INVENTORY STATE FARM PROPERTY.

	Value Nov. 30, 1916	Deprecia- tion De- ducted 1917	Improve- ments Added 1927	Value Nov. 30, 1917
Real estate	$ 459,076.19			$ 459,076.19
Real estate carrying account	7,695.48		$ 14,378.87	22,074.35
Light and telephone system	18,170.38	$ 1,110.53	1,554.68	18,614.53
Personal Property—				
Administration Building furnishings	2,947.80	147.39	166.45	2,966.86
Amphitheatre chairs	3,500.94	175.05		3,325.89
W. and C. Building furnishings	3,788.86	189.44	51.00	3,650.42
Building fixtures (general)	4,736.69	187.86	10.65	4,559.48
Office furniture (general)	959.79	47.99	14.00	925.80
Tools and implements	12,681.02	634.05	735.02	12,781.99
Live stock (mule team and sheep)	1,640.00	1,200.00		440.00
Supplies, lumber, etc.	2,840.14	142.00	2,738.20	5,436.34
Scales	225.63	11.28		214.35
Pumps	111.75	5.58		106.17
Buildings—				
Administration building	32,039.32	480.59	748.56	32,307.29
Agriculture, Horticulture and Dairy building	46,367.34	695.51	472.54	46,144.37
Amphitheater	94,391.44	943.91	2,707.09	96,154.62
Art hall	514.42	25.72		488.70
Auto garage	42.86	2.14	5.02	45.74
Boys' and Girls' Club building	2,831.72	84.95	194.38	2,941.15
Bleachers	6,077.57	182.33	444.22	6,339.46
Band stand	209.81	10.49	53.00	252.32
Barber shop	145.80	14.58	20.43	151.65
College building	5,509.81	165.29	627.29	5,971.81
Cattle barn No. 1	4,190.95	62.86	53.49	4,181.58
Cattle barn No. 2	5,138.43	77.08	51.23	5,112.58
Cattle barn No. 3	2,165.92	64.98	142.59	2,243.53
Cattle barn No. 4	5,718.32	85.77	49.73	5,682.28
Cattle barn No. 5	638.87	19.17		619.70
Cattle barn No. 6	638.87	19.17		619.70
Cattle barn No. 7	638.87	19.17		619.70
Cattle barn No. 8	638.87	19.17		619.70
Cattle barn No. 9	638.87	19.17		619.70
Cattle barn No. 10	638.87	19.17		619.70
Cattle barn No. 11	638.87	19.17		619.70
Cattle barn No. 12	638.87	19.17		619.70
Cattle barn No. 13	638.87	19.17		619.70
Cattle barn No. 14	638.87	19.17	9.92	629.62
Cattle barn No. 15	638.87	19.17	9.92	629.62
Cattle barn No. 16	638.87	19.17		619.70
Cattle barn No. 17	300.08	15.00		285.08
Cattle barn No. 18	300.08	15.00		285.08
Cattle barn No. 19	300.08	15.00		285.08
Cattle barn No. 20	218.70	21.87		196.83
Cattle barn No. 21	218.70	21.87		196.83
Cattle barn No. 22	300.12	30.01		270.11
Cattle barn wash stands, etc.	47.38	4.74		42.64
Closet No. 1	265.42	10.62	13.31	268.11
Closet No. 2	265.42	10.62	19.00	273.80
Closet No. 3	2,654.21	106.17	51.97	2,600.01
Closet No. 4	85.74	4.29	9.00	90.45
Closet No. 5	2,654.21	106.17	40.98	2,589.02
Closet No. 6	171.48	8.57	12.00	174.91
Closet No. 8	2,654.21	106.17	63.79	2,611.83
Closet No. 9	171.48	8.57	12.00	174.91
Closet No. 10	171.48	8.57	7.00	169.91
Closet No. 11	107.17	5.36	9.00	110.81
Closet No. 12	128.60	6.43	23.25	145.42
Closet No. 13	171.48	8.57	12.00	174.91
Closet No. 14	257.21	12.86	16.00	260.35
Closet No. 15	171.48	8.57	12.00	174.91
Closet No. 16	171.48	8.57	12.00	174.91
Closet No. 17	36.45	3.65	5.00	37.80
Closet No. 18	10.94	1.09	4.00	13.85
Closet No. 19	36.45	3.65	4.00	36.80
Closet No. 20	54.67	5.47	2.23	51.43

INVENTORY STATE FARM PROAERTY—Continued.

	Value Nov. 30, 1916	Depreciation Deducted 1917	Improvements Added 1917	Value Nov. 30, 1917
Closet No. 21	63.15	3.16	------------	59.99
Dining halls (4 brick)	8,144.75	162.90	961.13	8,942.98
Dining hall on Grand Avenue	6,289.19	188.68	116.67	6,217.18
Dining hall west of track	150.04	7.50	13.75	156.29
Exposition building	13,790.04	551.60	754.58	13,993.02
Farm house	3,514.94	140.60	86.15	3,460.49
Farm barn	1,327.10	53.08	------------	1,274.02
Floral hall	2,215.66	221.56	------------	1,994.10
Forage barn	1,893.60	75.74	------------	1,817.86
Forage barn, camp ground	85.74	4.29	------------	81.45
Fire station	570.41	17.11	26.68	579.98
Flag pole	------------	------------	444.43	444.43
Game farm cottage	754.62	30.18	------------	724.44
Grocery store	428.69	21.43	43.38	450.64
Grand Avenue entrance	1,393.49	20.90	100.50	1,473.09
Horse barn, brick	49,493.42	742.40	704.16	49.455.18
Horse barn No. 1	1,825.35	54.76	32.67	1,803.26
Horse barn No. 2	1,369.01	41.07	24.54	1,352.48
Horse barn No. 3	1,825.35	54.76	32.67	1,803.26
Horse barn No. 4	1,642.81	49.28	29.57	1,623.10
Horse barn No. 5	1,642.81	49.28	29.57	1,623.10
Horse barn No. 6	1,551.54	46.55	27.93	1,532.92
Horse barn No. 7	1,251.25	37.54	22.02	1,235.73
Hospital	730.14	21.90	67.61	775.85
Ice house	300.08	15.00	10.00	295.08
Judges' stand	251.47	2.51	------------	248.96
Judges' stand, show ring	16.20	1.62	------------	14.58
Lumber shed	342.95	17.15	------------	325.80
Machinery hall	77,923.61	1,168.85	1,179.97	77,934.73
Meat market	208.32	20.83	27.86	215.35
Mines and Mining building	461.04	13.83	20.77	467.98
Office building No. 1	85.74	4.29	------------	81.45
Office building No. 2	325.66	13.03	21.54	334.17
Office building No. 3	171.47	8.57	------------	162.90
Office building No. 4	85.74	4.29	------------	81.45
Office building No. 5	85.74	4.29	------------	81.45
Office building No. 6	214.34	10.72	12.92	216.54
Office building No. 7	214.34	10.72	74.61	278.23
Office building No. 8	257.21	12.86	77.60	321.95
Office building No. 9	85.74	4.29	28.84	110.29
Office building No. 10	257.21	12.86	70.61	314.96
Office building No. 11	128.60	6.43	28.84	151.01
Office building No. 12	182.16	9.11	37.28	210.33
Office building No. 13	309.66	12.39	25.18	322.45
Office building No. 14	227.59	11.38	------------	216.21
Office building No. 15	34.30	1.72	------------	32.58
Office building No. 16	148.88	7.44	------------	141.44
Poultry building	5,422.26	216.89	3,026.24	8,231.61
Power hall	3,994.63	159.78	------------	3,834.85
Post office	332.13	13.28	37.11	355.96
Police headquarters	428.69	21.43	------------	407.26
Police barn No. 1	36.45	3.65	------------	32.80
Police barn No. 2	72.90	7.29	------------	65.61
Paddock	9,305.04	186.10	------------	9,118.94
Rock Island entrance	287.88	14.39	------------	273.49
Swine pavilion	73,751.65	1,106.27	3,490.31	76,135.69
Stock pavilion	37,552.82	563.29	245.16	37,234.69
Street car station	8,036.66	80.37	116.04	8,072.33
Speed barn No. 1	1,095.21	32.86	60.31	1,122.66
Speed barn No. 2	1,095.21	32.86	60.31	1,122.66
Speed barn No. 3	1,095.21	32.86	60.31	1,122.66
Speed barn No. 4	1,095.21	32.86	60.31	1,122.66
Speed barn No. 5	1,095.21	32.86	60.31	1,122.66
Speed barn No. 6	1,095.21	32.86	60.31	1,122.66
Speed barn No. 7	1,095.21	32.86	60.31	1,122.66
Speed barn No. 8	912.67	27.38	50.25	935.54
Speed barn No. 9	912.67	27.38	50.25	935.54
Speed barn No. 10	912.67	27.38	50.25	935.54
Speed barn No. 11	619.32	24.77	35.19	629.74
Speed barn No. 12	575.08	23.00	32.67	584.75

INVENTORY STATE FARM PROPERTY—Continued.

	Value Nov. 30, 1916	Depreciation Deducted 1917	Improvements Added 1917	Value Nov. 30, 1917
Sheep barn	25,420.21	508.40	121.72	25,033.53
Telephone station	638.87	19.17	43.06	662.76
Ticket booth No. 1	12.87	.64		12.23
Ticket booth No. 2	12.87	.64		12.23
Ticket booths Nos. 4 and 5	85.74	4.29		81.45
Ticket booths Nos. 6 and 7	85.74	4.29		81.45
Ticket booths Nos. 8 and 9	85.74	4.29		81.45
Ticket booth, Grand Avenue	64.30	3.21		61.09
Ticket booth, Grand Avenue	21.45	1.07		20.38
Ticket booth, quarter stretch	8.57	.47		8.10
Ticket booth, amphitheater	22.12	.88	3.30	24.54
Ticket booth, amphitheater	44.24	1.77	6.56	49.03
Ticket booth, amphitheater	30.97	1.24	4.61	34.34
Ticket booth, amphitheatre	44.24	1.77	6.56	49.03
Ticket booth, reserved seats	30.97	1.24	6.50	36.23
Ticket booth, stock pavilion	30.97	1.24		29.73
Ticket booth, Rock Island	66.36	2.65		63.71
Ticket booth, Rock Island	22.12	.88		21.24
Ticket booth, amphitheater paddock	21.45	1.07	4.00	24.38
Vaudeville stages	1,452.14	58.08	489.24	1,883.30
Women and Children's building	77,713.66	1,165.70	793.34	77,341.30
Women and Children's bldg. hospital	100.00	5.00	1.75	96.75
Walnut street entrance			1,296.94	1,296.94
Building carrying account	586.68		239.71	826.39
Total	$1,185,002.96	$ 16,025.98	$ 41,273.77	$ 1,210,250.75

BALANCE SHEET, NOVEMBER 30, 1917.

ASSETS.

Real estate	$ 481,150.54	
Buildings	676,078.38	
Light and telephone plant	18,614.53	
Personal property	34,407.30	
		$ 1,210,250.75
Accounts receivable		80.57
Cash balance in treasury, November 30, 1917		34,822.20
Total assets		$ 1,245,153.52

LIABILITIES.

Accounts payable	$ 287.81	
State appropriation for frame buildings, 1885	50,000.00	
State appropriation for additional real estate	30,443.72	
State appropriation for permanent buildings since 1902	446,000.00	
		$ 526,731.53
Surplus on account of increase in value of real estate and profits of fair invested in permanent improvements		718,421.99
Total liabilities		$ 1,245,153.52

The Chairman: We have a department in our fair known as the Boys' State Fair Camp, with which you are all familiar. We select a boy from each county in the state by competition, and those boys come to the fair to the boys' camp. Of course we use them wherever we can but half their time is spent in hearing lectures and exercises in different departments of the fair. Then when the boys go home we ask them to write an essay on the Iowa State Fair. We have with us today the boy who wrote the first prize essay. It gives me great pleasure to present to you Herman W. Carlson of Blakesburg, the winner in the essay contest.

WHAT I SAW AND LEARNED AT THE IOWA STATE FAIR.

HERMAN W. CARLSON, BLAKESBURG.

My trip to the Iowa State Fair and Exposition was truly very interesting and educational to me. Traveling by way of the C., B. & Q. route I saw part of Iowa's great farming land. Many were the fields of waving corn upon which I gazed as I passed through them on my way to the Boys' Camp at the Iowa State Fair and I was impressed as never before that our state was truly a great agricultural state. However, I also passed through numerous coal mining towns and this brought home to me the fact that Iowa has other valuable industries as well as farming and breeding live stock.

Upon arriving in Des Moines I took a car direct to the fair grounds and was soon at my destination. I was directed to the Administration Building where I was enrolled as a member of the Boys' 1917 State Fair Camp. Here in camp I made many new acquaintances and friends, and spent ten well-filled days of fun, recreation and work. Our work mostly consisted of ushering at the grandstand and stock pavilion, and this brought us in contact with all kinds of people and taught us that we all need to practice self-control in a place of that sort. However, we were always under the supervision of the camp leaders and they were always ready and willing to help us. The Chapel services at the camp each morning were a benefit to all of us I am sure. I for one will never forget the talk on "Habit" given us by one of Uncle Sam's Army Chaplains.

Surrounding the camp were many things of interest, among them the machinery exhibits. This exhibit was a delight to the farm boy for here he could see all the modern machinery, such as tractors, gasoline engines, ensilage cutters, etc., which every farmer boy is interested in.

I visited the Poultry Building, the Agricultural and Horticultural Building and was greatly interested in the exhibits in both buildings. The "Horn of Plenty" in the Agricultural Building was wonderful and attracted the attention of thousands of people. The county exhibits and the individual farm exhibits naturally interested all farmer boys and I hope we gathered some valuable pointers for our home work from these exhibits.

Then, too, the live stock judging in the stock pavilion was one of the interesting places on the grounds. Never before had I seen such a fine show of purebred live stock. I visited the barns also and learned many things concerning the care, feeding and judging of live stock.

I saw thousands of Iowa's soldiers, of whom we are all very proud. To see them march and drill with "Old Glory" towering above them, made one's heart thump with patriotism. Thus I learned that our state has willingly given her share of young manhood for her country's sake. I am sure this was an incentive for us all to do our bit. I visited the navy exhibit and received valuable knowledge thereby. At the Women's and Children's Building I noticed the work and exhibits of the American Red Cross Association and this brought to me a fuller realization of what this association was doing to relieve the suffering of war. I am also glad that I saw the great electrical works by the world's greatest inventor, Thomas A. Edison.

The many different kinds of automobiles and vehicles made me think how progressive our nation really is in the different modes of traveling, as well as in other industries. I saw my first auto race and my first auto polo game and thoroughly enjoyed them.

I spent an enjoyable afternoon in the city of Des Moines. I visited the State House, Historical Building and the Y. M. C. A. I wished for more time to look over the relics, etc., at the Historical Building.

The amusements at the fair were good and we were glad of the opportunity to witness the horse racing, different vaudeville acts, the fireworks show and the music by the various bands was also appreciated.

Many were the benefits derived from my trip to the Iowa State Fair and I certainly appreciate that I was given this wonderful opportunity. It was more than worth the effort I put forth and I was so well repaid that I shall always be a booster for the Boys' Camp, the Iowa State Fair, and the grand state of Iowa, "The Beautiful Land."

Mr. J. Q. Lauer: I want to take this opportunity to suggest a matter that is of particular interest to me and it seems to be equally so with the majority of people who were in attendance at the meeting yesterday—that is the attendance of the fair managers at this state agricultural convention. In view of the fact that we have ninety-four fairs in the State of Iowa, and all of them receiving state aid, it seems hardly right that there should be so few represented here this morning. In looking over the room I doubt if there are over thirty fairs represented here this morning.

I want to mention particularly the matter discussed in the fair managers' convention yesterday with regard to advocating legislation whereby we can compel all the county fairs receiving state aid to have at least one representative present at this agricultural convention. I have not as yet found a dissenting voice among those who have heard suggested the advisability of something being done that will compel the different fairs having a representative at this meeting. As secretary of the fair managers' association I have received some very impertinent letters from different fair officials, conveying the idea that "we never did belong and never will, and we will get our state aid just the same". I made a trip this year to the southwestern part of the state and in talking with some of the officers I found that they had never heard anything from our association. I have in mind two places in the southwestern part of the state where I sent literature with regard to our association and the annual meeting, where the matter had never been brought to the attention of the fair managers, for the secretary had confiscated the communications and had never brought the matter to the attention of the fair officials. Consequently nothing was done. That being the condition in some places, I hope that everybody interested in fair work will take that into consideration and see if it can't be arranged that every fair receiving state aid should have a representative attending the state agricultural convention. I have not drafted a law covering this particular feature, but I know that the legislative committee can prepare such a bill and present it to the legislature, and I feel sure that it can be passed without any trouble whatever.

The Chairman: We have with us today an old-time fair man who never has lost his interest in fair work, or lost his interest in the agricultural interests of Iowa. If we have one proposition in the State of Iowa that is of interest to farmers, it is the matter of seed corn, and I am going to call upon my old friend John Cownie to give us a talk on seed corn.

MR. JOHN COWNIE.

Mr. President and Gentlemen of the Convention:

I am always ashamed to talk seed corn! It is a very humiliating condition that we are placed in this year with regard to seed corn. It is over twenty years since I had an experience with seed corn and I will never forget, and from that time to this I have been writing and urging farmers to adopt my method of saving their seed corn that would make crop failure impossible.

When I was connected with the state institutions of Iowa as a member of the Board of Control, I was informed that they always had trouble with their seed corn and I told them that they were not going to have any more trouble now. I went around to the different institutions and advised them to select a place for seed corn; but I wasn't satisfied to just tell them, I went around with the superintendent and selected a place in some of the buildings where there was steam heat, and good ventilation. We selected our seed corn in September, picking out the best ears just past the roasting-ear stage, and right over the boilers we had our seed corn strung where it would get the full benefit of that heat, and in the twelve years that I was a member of the Board of Control we did not have to replant a single hill of corn. I had patience with the men who had that work to do, and was rewarded by getting results.

Gentlemen, we have had a great deal of erroneous teaching with regard to seed corn. I have tried time and again to convince farmers of Iowa that there is only one place for seed corn to be kept and that is in a dwelling house. In the early days there was no harm in taking seed corn in the house, but when we built modern homes we got a little toney and put the seed corn in an outbuilding. I got in the same fix one year. We had an outbuilding that was plastered and my wife said, "John, I don't want to keep seed corn in the house now." We had a carpet on the floor, while we used to have a bare floor, and so I put it in the outbuilding. The outbuilding had a shingle roof, but there was no heat, and the corn was a failure. I supposed it would grow just the same without any testing, and I did not test it. We planted that corn that year three times and it cost me over $3,000. I called my wife's attention to it and she apologized and said, "I don't want trouble of that kind with the seed corn again."

If every man here, and every man connected with the State Agricultural Society, and my friend here, Professor Curtiss, will get over the idea of not taking seed corn into the house, you will find no more difficulty in having satisfactory seed corn. At one time when I was advocating the saving of seed corn by this method a newspaper reporter present wrote up an article in which he said I told them to take the corn into the best room in the house, take it right into the parlor with the piano, and in order to get best results it should have a tune once in a while. I have never gone quite so far as that, but if you will take your corn into the house and give it artificial heat, you will have no more corn failures.

The Chairman: According to our program we have one more paper to be read before lunch, but Dr. Chappel has kindly consented to read it this afternoon, so it will be postponed until that time.

If you have not handed in your credentials, you had better do so in order that the credentials committee may make their report. Our program will commence at 1:30 this afternoon.

AFTERNOON SESSION.

The Chairman: The first we have on the program for this afternoon is the unfinished business of this morning, that is the reading of the official crop estimate for 1917, by Dr. George M. Chappel, director of the Iowa Weather and Crop Service.

FINAL SUMMARY OF IOWA CROPS FOR 1917.

BY GEORGE M. CHAPPEL.

Following is a summary of reports from crop correspondents of the Iowa Weather and Crop Service, showing the average yield per acre and total yields of staple soil products, and the average price at the nearest station, December 1, 1917. This report does not include or take into consideration live stock, poultry or dairy products.

The crop season of 1917 was an exceptional one; most of the crops being produced under great handicaps. The winter of 1916-17 was cold and the precipitation was generally deficient, particularly in the southern portion of the state. The snowfall was about normal in the northern counties, but very deficient in the southern sections until March and April, when in the latter month it exceeded the total amount for the three preceding months. A glaze storm on the night of December 25-26 covered nearly the entire state with a heavy coating of ice; and another on March 12-13 covered the region from the Des Moines to the Mississippi rivers. April, May and June were abnormally cold and April and June were excessively wet. Cold weather continued until July 20th, after which it was hot and relatively dry until August 4th. The remainder of August was cool and the showers were light and scattered. Drought and grasshoppers became serious in some of the south-central and southeastern counties. September was cooler than normal with heavy frosts on the 11th, on the lowlands in the northern and eastern sections; there was, however, a warm period from the 13th to the 18th. Killing frosts occurred in some sections of the state on October 1st, in all but the southwestern portion on the 6th, and throughout the state on the 8th; and the entire month was cold, being the coldest of record, and 3.1° colder than October, 1895, which heretofore held the record. Sunshine was unusually deficient, particularly in the northeast portion where it was less than one-third of the possible amount. November was much warmer and drier than usual with about the normal amount of sunshine.

The winter-killing of wheat was due to the following causes: First, the plants were not well established at the beginning of winter. In the central and southern divisions, which include the bulk of the winter wheat acreage, drought, August 16-31, September 13-24, and October 1-14, 1916, delayed plowing, seeding and germination. November was warm with plenty of moisture, and the young plants got a fair start but were not sufficiently strong to resist the rigorous winter that followed. Second, the general glaze storm of Christmas night covered almost the entire area with a smothering coat of ice. Third, the snow covering was absent or generally deficient. In the central portion of the state there was considerable snow covering, but subsequent weather conditions reduced it to an impervious layer of ice equal in smothering properties to a covering of glaze. Where the snow covering was absent the plants were subjected to unusual extremes of temperature. Fourth, drought prevailed throughout the winter. The last three causes were responsible for the winter-killing of grasses.

In the northern portion of the state where the snow covering was deeper, more porous and continuous, grasses and the small acreage of winter wheat that was sown did not suffer so seriously. The warm and normally moist March and the cool and generally wet spring and early summer were especially favorable for oats, spring wheat and barley, all of which made large yields, barley making a record yield. The yield of winter wheat on the acreage that was considered promising enough to let grow was good.

The corn acreage was greatly increased by plowing up the winter-killed wheat fields and meadows. This, together with the cold, wet, unfavorable spring, started it out about two weeks late. Large areas in the southern portion of the state were washed out or drowned out and replanted, some as late at the closing days of June. The abnormally cool weather of May, June and the first half of July did not give the corn a chance to catch up. About the only good corn weather of the season occurred from July 20th to August 4th. Two weeks more of good corn weather would have matured a phenomenal crop, but a cold and cloudy October caught it unprepared. The yield is good but the quality is unusually poor.

November, though much warmer and drier than normal, closed with the crop generally unfit for cribbing. Seed corn gathered since October 8th almost without exception shows very low germination tests. Considerable care will need to be exercised before another planting season to discover the unreliable seed, locate supplies of good seed and effect the proper distribution. Droughty conditions and grasshoppers during August, in some of the south-central and southeastern counties, made the pastures brown and bare. The Iowa Weather and Crop Service was consulted by several cattle men seeking pasturage in more favorable sections of the state to avoid the use of high-priced dry feed or immature corn fodder.

Looking forward to the winter wheat crop of 1918, it should be noted that in certain portions of the state, particularly the south-central and western, plowing, seeding, and germination were delayed by dry, hard soil and droughty conditions, and October was too cold, and in some sections grasshoppers kept it eaten down so that plants are not entering the winter in a resistant condition. There has been a great increase in the acreage sown as compared with the area harvested in 1917, but the acreage is considerably below the normal, and in order that we may have a normal wheat crop next year it will be necessary to greatly increase the acreage of spring wheat.

TABULATED CROP SUMMARY.

	Acres	Average yield	Average price	Total yield	Total value
Corn	10,242.000	40 Bu.	$ .97	409.667.000	$397,376,990
Oats	5,238,500	46 Bu.	.61	239,416,200	146,043,882
Spring wheat	173,460	18 Bu.	1.94	3.199,820	6,207,652
Winter wheat	133.930	18 Bu.	1.97	2,397.560	4,723,193
Barley	258,775	35 Bu.	1.15	9,111,590	10,478,328
Rye	35,275	20 Bu.	1.58	722,410	1,141,408
Flax seed	7,430	11 Bu.	2.87	80,810	231,925
Timothy seed	290,243	4.5 Bu.	3.37	1.306,093	4,401,533
Clover seed	61,560	1.5 Bu.	14.00	92,340	1,292,760
Potatoes	99,610	109 Bu.	1.32	10,793,600	14,247,552
Hay (tame)	2,671,100	1.3 tons	18.82	3,584,400	67,458,408
Hay (wild)	524,912	1.2 tons	14.79	636.947	9,420,446
Alfalfa	103,215	3.4 tons	23.40	353.830	8,279,622
Pasture and grazing				Estimated	100,000.000
Ensilage				Estimated	16,686,000
Sweet corn				Estimated	5,800,000
Pop corn				Estimated	900,000
Buckwheat				Estimated	370,000
Fruit crop				Estimated	7,000.000
Garden truck				Estimated	8,000,000
Miscellaneous				Estimated	12,000,000

Total value $822,059,699

The value of soil products for 1916 was........................$597,165,673

The Chairman: Gentlemen, we have with us today Mr. John Wallace, chairman of the Red Cross Christmas Membership Campaign, who would like to explain the Red Cross work.

JOHN WALLACE.

As we are sitting here in this comfortable room today, there are American soldiers in the trenches in France. They are standing shoulder to shoulder with the French and British who had been fighting our battles for the past three years—and now well into the fourth year. There are thousands of our boys in the training camps of France—we don't know how many thousand, for the government does not tell us; and there are thousands of the best of American manhood in the great training cantonments all over this country. There will be thousands more selected during the coming months. These men are all being selected for the one big thing—the drive in the spring When spring opens up on the western front in France, we will see a battle such as we have never seen before—such as this war has not seen before. That means we will have a casualty list in Iowa so long that you men will be standing before the bulletin boards hoping and praying that the name of your boy is not there; but thousands of our boys will be wounded.

The organization that takes care of the wounded soldier is the American Red Cross. The American Red Cross is responsible for the first emergency treatment that is given for the care of the wounded. They have a first-aid hospital close back of the firing line where emergency treatment is given. Then the wounded boy goes back to the base hospital where our best and most skilled American surgeons will be in attendance and where operations will be performed to save that boy's life, and the number of lives that will be saved will depend upon what you do for the Red Cross. The war will be brought home to the people of this country in the spring as it has been brought home to the Allies in the past three years. If the boy comes through all right in the emergency hospital, he is sent to the base hospital, and from the base hospital he goes to the convalescent hospital. The efficiency of this work is shown by the report that 70 per cent of the German wounded go back to the firing line; 68 per cent in the British army, and the lowest percentage, I believe, of any army is 58 per cent. The Red Cross will send many a boy home to us who would otherwise be lost.

That is not alone the work of the Red Cross. Our American Red Cross has been furnishing supplies to 3,463 French hospitals. They have been furnishing surgical dressings to over 2,000 hospitals. These hospitals look to us to keep this work up. We must keep it up. In the past there has been such a scarcity of dressings that the hospitals were forced to use newspapers, and the printer's ink on the papers on coming in contact with the wound has caused gangrene. Some people say, "What are they doing with the surgical dressings that the women of the United States are making?" They aren't making too many, for there have been as many as 300,000 men put out of commission in a three-days' fight. You can imagine what that means!

As an example of the work that the Red Cross is today doing I will say that last Saturday we received a requisition for 45,000 Red Cross surgical dressings, which will take $7,000 of material, and we have to deliver these pads by the first of January. Other chapters are being requisitioned for supplies in the same way, all of which are necessary for hospital work, and they are filling their requisitions just as rapidly.

The Red Cross does more work than that. They conduct the trench canteen, which is a restaurant. Those canteens provide the boys a place to buy food. For instance, for thirteen cents a boy will get soup, beef or lamb, coffee, and rice pudding, or something like that. All that for thirteen cents. That is actual cost. That is the only thing they charge for, the food. The system is to put the boys in the trenches for eighteen days at a stretch—six days there in the front line trench, six days in the secondary trenches, and the third six days back in the first line trenches. Those boys stand in the water to their hips, and they have only a dugout to sleep in. Soldiers tell me that it is an actual fact that the men get literally covered with vermin; they get caked with mud, and you cannot tell whether they are black or white after they have been in front-line service for a while. And so the trench canteens provide baths for the boys and a sterilizer for their clothes. And when a boy gets off the firing line he gets a bath, and has his clothes sterilized and gets a place to sleep. Some of these canteens are large enough to care for 5,000 people. They even have a place where a boy can get his mind off the horror of war in a bomb-proof movie theatre. We have no idea what the boys are subjected to, for we jump when a small cannon goes off, but think what it is where there are thousands. There is a cannon every six feet on that front.

In addition to that there are many people homeless in the warring countries who are being cared for by the Red Cross. There are 1,500 villages, as well as the country in between, that has been totally destroyed by the Germans in their retreat—a section almost as large as the state of Iowa. Imagine a tract of ground as large as this state without a tree or fence or a house on it, and with great shell holes as big as this capital building, and you have a picture of a large part of the battlefield in France.

The Red Cross is taking care of homeless children in Belgium. They have restored children to their parents, and parents to their families.

In addition to that, the Red Cross is at work right here at home. Take the Halifax disaster. Within a few hours the Red Cross was there with great quantities of supplies and nurses and doctors to take care of the injured and homeless. There are 25,000 homeless people in Halifax, and the Red Cross organized that relief work and was on hand when their help was most needed. The Red Cross is the great humanitarian arm of our government. Take the Eastland disaster in Chicago, when hundreds of excursionists were drowned. The Red Cross was there promptly and at work. In the cyclones in Illinois and Indiana they were likewise efficient.

But of course the war task overshadows all at this time, and that is the why of this Christmas campaign. There are four million members of the Red Cross in the United States at this time. We want to make the number fifteen million, and we ought to do it. I believe the population of Iowa is 2,358,611, or thereabout, in round numbers. There are approximately 250,000 Red Cross memberships in Iowa, and we are going after a record in this state. Our minimum quota in Iowa is one for every four people, which would mean between six and seven hundred thousand. I have been talking over the telephone today with our friends from out in the state, and they say, "We are not going to be satisfied with that; we want one out of every two people in Iowa," and I hope that there are many counties in Iowa that will do that very thing.

We ask that every one who is a member of the Red Cross shall pay his annual dues. We want him to pay the dues in December of each year, unless you have joined within the past few weeks or month. Suppose we renew 250,000 memberships in Iowa this campaign, and are able to increase the number by five or six hundred thousand. That is what we want. It is not the money that we want in this campaign so much as it is the interest of every man and woman and child in Iowa in this great work, but the money is a consideration, for fifty cents out of each dollar that comes in stays right at home in your local chapter. Say we get 600,000 members, that would mean $300,000, that can be devoted to the purchase of materials for surgical dressings, wool for socks, sweaters, hospital garments, etc. That is a considerable item in the aggregate. It means a lot to us, and that is the why of this Christmas campaign at this time. Some of us might say, "Why don't you put this off until next summer?" That was my first thought, and then I thought of the tremendous need and I made up my mind that it would be almost criminal to put it off till next summer. Because we need the interest of the people in the Red Cross, and we need the money, and we are going to get both. It is simply a matter of passing the message along, and that is why I am here today.

We are planning on a thorough organization in every county and in every township and in every city and in every town in the state of

Iowa. We want to reach every home. We want to reach the head of every home, and we want to reach the wife, and we want to reach the children. We want every family to be 100 per cent efficient. That is, that you as the head of the family have a $2 membership, and that your wife have a dollar membership and each child a dollar membership. So that we want every family 100 per cent efficient in this campaign, and a part of the campaign is the service flag. The service flag is a Red Cross flag with a blue border which is to be hung in the window of your home or place of business when you join in this campaign, and it is to stay there until Christmas night. The Red Cross has suggested that you put a candle or light behind the flag so that it will show through, and as you drive along the road in town or country you will see this service flag. They have suggested that you put a Red Cross in that flag for every member in your family that has a membership. For instance, a big Red Cross signifies one membership, and if there are four other members in your family who are members, you put a small Red Cross sticker on the flag for each member of your family. The idea is to get a little bit of Christmas spirit for the Red Cross. The Red Cross means patriotism. It is not a time for you or for me to quibble about the time the campaign should be held, to which we are asking you to contribute, but it is up to us to get back of the Red Cross, and get back of the Liberty Loan, and get back of the Y. M. C. A.. and get back of the President in the winning of this war. All these things are a means to an end, and our big business is to WIN THIS WAR. I think some of us would make pretty good fighters, but we are above the age and we can't all go to Europe to fight, but we can fight through the American Red Cross and the Liberty Bonds and the Y. M. C. A., and I ask you gentlemen when you go home to enlist for this Red Cross campaign and call up the chairman of your chapter. There are 172 chapters of the Red Cross in Iowa, and all of these chapters have branches. I will ask you to call up the chairman of your chapter and tell him that you want to get back of the Red Cross in this campaign and that you will do anything you can to help them along. If you have any doubts as to whether you should do it, and you think it is a very hard job, just think of the thousands of young men in our state who have given up their jobs on the farm, and who have given up good-paying positions in offices, to go out and fight for their country. It is your way of fighting. I don't think a family in Iowa should be able to gather around the fireside on Christmas day and say that they are not members of the American Red Cross. I don't believe that many homes in Iowa will be able to say that they are not 100 per cent efficient in this Red Cross campaign. If we get after this thing as we should, there is nothing that can stop us having one million members instead of six hundred thousand.

The Chairman: We have a gentleman with us who is at the head of this great state of Iowa, whom I know to be intensely interested in everything pertaining to Iowa, and who is interested in everything that you are interested in. He is a friend of the fair, and a friend of the people of the state. I take great pleasure in presenting to you Hon. W. L. Harding, governor of the state of Iowa.

REMARKS OF THE GOVERNOR.

HON. W. L. HARDING.

Hon. W. L. Harding: Gentlemen: It was my privilege, and I felt it also a duty, to visit the troops down at Camp Cody. In fact, I am trying to visit the Iowa troops wherever they may be stationed in this country, once at least before they leave for across the water. (Applause). I saw 25,000 American soldiers on that parade ground on Sunday morning—8,000 of them from Iowa—and when you look at that body of young men, the suggestion made by Mr. Wallace of what they are doing and how little we may be doing here at home as compared with what those young men are doing, comes home all the more strongly. It seems to me there ought not to be a single, solitary person in all this state that is not a member of the Red Cross. While at Camp Cody I visited the hospitals. The work that the Red Cross is doing there is remarkable. These boys are a long ways from home. They are just as far away from home there as if they were in France, because Nature never picked that place as a training camp. I understand that to be a brave man you must have a lot of "sand", and after you have been there for twenty-four hours you have plenty of it.

I visited the hospitals, and one lad was very sick, but the smile that came over his face when he saw somebody from home was pathetic. Before I left he turned on his pillow, and I know there were tears in his eyes (but nurses were about) as he told me of the good treatment he had received from the Red Cross. The money that we are going to give to this Red Cross is to see that the sick boys are taken care of, and I think if that message can be carried all over the state into every home there will be no question about the success of this campaign. Now, the thought I want to leave with the fair association—and I think it is the thought that ought to be brought home to you people—is that it is not necessary for men to change their occupation in order to help win this war. Too many men and women think, now that we are at war, that they must change their occupation and get into some other line—some branch of the service in order to help their country in this hour of need. What we do need is every man with his shoulder to the wheel in his own business pushing harder than he has ever pushed before. If your business was important in the days of peace as a producer, then it is doubly important in the time of war. These other matters that we take on, such as the Red Cross, the Liberty Bonds, and the Y. M. C. A. are simply additional burdens but it does not mean that a man should let up in his usual and ordinary avocation.

We have a great deal of trouble in our office because of those who want to organize home guards or something of that kind. They think it would be nice to have a body of men training in their town. It would be, but we don't want men training as home guards when we have a war on our hands. They had better be training in home-gardens and home-farms rather than marching around with a broomstick trying to be a trained soldier. And the message that must somehow get to our people in all its seriousness is that each man must now attend to his own business, provided the government has not called him to go into the service. Not five minutes ago I got through talking with a man who is past the age limit who says he wants to serve his country. I said "If you do and you mean it, get on a pair of overalls and go out and pick corn," but that didn't appeal to him. Now, we have that type of men, unfortunately, right here in Iowa, and it is up to those who are real patriots to carry this message: That every man should take the place that he can find that is open and get into it and work. That is the spirit of the true soldier, and I want to tell you it is the spirit of the boys down there at Camp Cody. They are not complaining; they are feeling good. There are conditions that could be changed, no doubt, and that ought to be changed, and I have no doubt will be changed; but the boys are not saying anything about it, and you never would find it out if you had to wait for them to tell you. And we have got to have that same spirit right here at home.

So far as the state fair association and the county and district fair association are concerned, what they can do to help win this war is to keep on in the business that you have been in, only intensify it 100 per cent, if possible. You have your organizations, don't abandon them; don't go out of the business; but, instead of having your organization active for a short time in the year, make it active for 365 days now. An agricultural association like this can do wonders, provided it is working. That, of course, is the hard thing. It is hard to get people stirred up to the place where they realize the task that we have before us, and how much they can do to solve that task. Personally, I am not optimistic about the outcome of this war, for two reasons:

First: That we are getting into it late, and

Second: That our people yet have not got into the spirit that is necessary to win a war, fighting against an enemy the like of which we are fighting. You cannot whip the Hun by slapping him three times on the wrist. They are organized; have been for twenty-five years preparing for this war. The date may not have been actually fixed, but approximately it was. Now, we are going up against that sort of machine, that sort of an organization. It means that every man must about-face, get into the spirit of the war and be ready to fight at home, and you are not fighting at home unless you are doubling your energy in your own occupation and then carrying these outside burdens that come along that are incident to the war.

I spent more time at the state fair this year than I have ever spent at the state fair before. I think I missed only two days, I don't mean by that that I was there all the time, but I took opportunity to visit practically every exhibit. It was an education and a rest to me, and also an inspiration. The best of the state was exhibited on the fair grounds. It simply opened before one's eyes the possibilities of a rich, fertile state like Iowa, if our people will merely put their attention and their energy to the task. Iowa is rich beyond the dream of any of us who are here. We have only touched the top of the surface—scratched it, if you please. The state fair and the county fairs are designed to inspire the people to do their best, and as I saw those people out there at the fair ground and saw them talking about it, I was more convinced than ever that organizations of this kind or worth while, that they fill a place and that they ought to be encouraged and increased. I want to congratulate the managers of the state fair association on the splendid exhibition that we had this year, and I want to encourage you to go on and make it even better and better as the years come and go.

A year ago it was my privilege to attend many of the county fairs. I didn't do that this year! ! ! But I have enjoyed attending the county fairs. It is a source of inspiration to attend them, and it gives one pride in his state, and I think there cannot be too much state pride cultivated in the breast of our people. A man who does not think well of his home doesn't make a very good father or a very good citizen, and the man who does not think well of his state is apt to be a very poor father and is bound to be a mighty poor citizen. It is up to us to encourage our people to have pride in their state. It is one way of building citizenship; it is one way of building this state; it is one way of building civilization, and all of the struggle we are now engaged in is for civilization.

I know you are busy men. You are here to look after the matter-of-fact details of these organizations, not to listen to long speeches from me. It is a pleasure to be privileged to meet with you, to know that the citizenship of the state is responding to the call of the nation and of the world at this time. The responsibilities of the office which I hold are many and I haven't had opportunity to give as much attention to the work of this organization as I should like to do, but I know that you are performing the tasks in such a way that you can be commended on the progress being made. Mr. Wallace is right when he says that there is just one task before America to do, and that is to win this war. Every thought, every deed, every action of every individual should be to bring about that result. This organization can be mighty helpful. You are in touch with those who are producing, and food is essential. The labor problem is going to be a serious one, but it is not so big that the men of Iowa cannot solve it and produce more food-stuff on Iowa farms next year than she produced last year or any other year in the history of the state, barring some accidents of Nature, of course.

To meet the problems growing out of this war may mean the entire reorganization of social conditions and social standards, and this organization must be leader in these new movements. You men who have been chosen to represent this organization in your various communities cannot simply attend this meeting and then go back home and wait for another annual meeting; but you must go out from this meeting evangelized for the cause of farming, for the cause of agriculture in this state, and expend your energy in bettering it every hour and every minute. You can do that! You have got to organize your communities. You have got to organize every community along that line of endeavor just the same as you do for the Red Cross. You have got to organize the county, the township and the school district, and it is up to this organization to lead. My message to you today is that you assume leadership with courage; don't falter; don't be afraid. You will have to break new ground, but those who are unwilling or afraid to break new ground or travel where no human foot has traveled before, never get very far. It is the pioneer who gets results, and this organization must do some pioneering. These problems that present themselves must be met, and you cannot wait for years to complete your task. You have got to win now, and your action will be approved, because the heart-beat, the calm heart-beat of the people of Iowa is back of this war for victory. And when you have the heart-beat of the people of Iowa back of you, you can take long strides in a very short time. So assume leadership and victory will come to our cause.

The Chairman: We have with us today a gentleman whose early education in fair work was developed in Iowa, and who was called East to show those Eastern people how to conduct a fair. I want to present to you your old friend, John C. Simpson, of Springfield, Massachusetts.

THE EAST AND THE WEST.

JOHN C. SIMPSON.

Mr. President and friends of Iowa: As I came down on the train this morning it seemed to me that Iowa land and Iowa cattle and Iowa hogs had never looked so good to me as they did then. Down in New England where I make my home at the present time, they have wonderful opportunities for agriculture, but they forgot the art many years ago. There thousands upon thousands of acres of land there now that is grown up in young timber and brush that once produced abundant crops, and Mr. Escher and Mr. Curtiss, or any other cattle men, will tell you that that country used to be the home of beef cattle. I think the first Hereford cattle raised in this country were raised in New England. I have been pretty busy ever since the middle of last March in getting my work lined up. I believe it was the second Sunday in March that I loaded my family into my automobile for our first drive, and I don't think that we missed a single Sunday all summer in driving on those beautiful roads that radiate out from Springfield. And the thing that grew on me more and more was the absence of the hog.

I was on the train at one time coming home from the northwest coast and an old gentleman and I got to talking. He seemed to be quite lonesome and in our talk he mentioned that he was from the state of Washington. He said he was farming out there and he used to farm in Indiana. I remarked that Washington was a wonderful country to grow wheat and livestock, and all such things, and he agreed with me, but evidently he was wanting to get back to his old home and talk about things farther back East. Finally he turned to me and said, "Young man, let me tell you something about this farming business. I was raised in Indiana and I know all about Indiana and Illinois and Iowa, and I have lived out here and have been farming twenty-five years; but let me tell you, young man, when you want to farm, never go so far away from home that you can't hear a pig squeal."

I have ridden for hours and hours, covering miles and miles, and have never seen a pig; and it has got so that my little boys notice the absence of the hog, and if we see a hog it makes us feel almost like seeing an old friend walking down the street. That is the trouble with that section today—the absence of stock. They have dairy cattle, and they are advanced in truck farming, but they need at the present time more livestock, more hogs, more beef, cattle, and more horses, and they are waking up to that fact. And because we have all of those animals here in abundance is the reason I say that Iowa never looked so good to me before as it did this morning as I came down on the train.

It seemed rather queer to me at first to think that these people should attempt to build a great exposition in a section that had been and is at the present time importing eighty per cent of what it consumes; but I can see a reason for this move, for I was brought up with the thought that an exposition is an educational institution. I suppose I have stated that, and restated it, and spoken it, and written it, until it has become shopworn to many of you, but nevertheless it is true. A fair or exposition, the Iowa state fair or the county fair, if it has not a place as an educational institution, has no right to exist. I believe it has a right to exist, and it takes rank with any other educational institution in the country.

I can remember when Gov. Harding was not governor of Iowa then (we were of about the same age) that he was not always interested in the state fair, but I suppose it was because Gov. Harding was not used to attending the fair. He couldn't get the viewpoint of the educational side of the show. In our part of the country where I am now engaged, of which I told you something last year, they have spent something like three-quarters of a million dollars, which has been procured through stock subscriptions. The states themselves do not maintain great organizations down there, as we do here, but the people who are doing this are the manufacturers. This may surprise you and you will ask, "Are they interested in agriculture?" They certainly are! They are interested in it to this extent, and you may call it selfish: Those men down there feel that they must reclaim and cultivate that land that once produced crops, in order to produce more of what the people are consuming, to reduce the high cost of living. The cost of living in the East is high. I have heard folks talk to the contrary, but don't let anybody tell you it doesn't cost any more to live in the East than it does out here. It costs laboring men more to live down there, and the laboring man must necessarily have a greater wage, and he receives a larger wage than he does here; and if he receives a greater wage, that means that the manufacturer puts out an article that costs more than his competitors farther west, and that is why the manufacturies are themselves slipping. At one time the entire boot and shoe industry of the United States was confined within the New England states, but it has been slipping and slipping and slipping. At the present time a large percentage of the boots and shoes are still being made in that section, but it is coming west, and St. Louis is now the center of the boot and shoe industry. The same is true of the machine-tool industry. Providence, Rhode Island, used to be the the center of this tool industry, and now it is Cincinnati, Ohio. And the thing that is back of it all is the high cost of living.

This organization that I am with not only built up this great plant, but they did something else; they built up a field department which has a budget, raised by subscription, of $70,000 for the next year. In this field department we have a marketing division. This marketing division is divided into two bureaus, one a purchasing bureau and the other a marketing bureau; and then in addition we have a home economics department, and several others. And all for the purpose of educating the people along these lines.

You must remember that down there state lines are very small, and it has brought us to this point, that the work must be dealt with as a whole and not as one state. Whatever problem interests the Connecticut man also interests the Massachusetts man, or the Maine or Vermont, or New Hampshire man. The college must confine its activities to the purposes of its own state, but this organization is working out plans which cover the entire section.

This same group of men are in earnest about this proposition and they recognize the difficulties they have before them. A lot of those men at one time felt they couldn't see the actual value of the exposition, or the show side of the fair, as they called it. I didn't blame them much because they didn't know a good show from a poor one. Massachussetts is the home of fairs. The first fair was held there 160 years ago, and they are holding the same fair there that they did then. Go down to this fair and you will find prizes listed for the best yoke of oxen. In making up our premium list last year I was asked, "Are you going to put in a work-cattle class?" and I said, "No; out in the country that I come from the only thing we know about work-cattle is the old yoke that my father had that we children fought over to see who got it. I think work cattle is probably responsible for some of the brush and timber that grows upon your land, so we are not going to start a work-cattle class." They didn't understand; they couldn't comprehend the magnitude to which the big shows have grown up in the middle west, and when they had been told something about it they apparently believed me, but can hardly comprehend it. I talked to one man at Hampton Falls, N. H., who puts his name on for $10,000 a year, about this proposition, but he didn't see the use of the show side. I have gotten another man to do the same thing, but it is hard for them to understand this feature. I told them about this great field work that they had which was nothing new to me, and I said, "Listen here, gentlemen, the work of your field department will die aborning if you don't get something back of it. You must get something to put inspiration in it if you want to continue that work," and so we want to bring the two together.

I do feel that I ought to say this to you. I have spent a good many years of my life in Iowa and a few in Minnesota, and now I have been down East a year or so. In that time I have visited practically every large fair in America; have investigated about them and written about them and know their present condition and status. When I was in Minnesota I probably wouldn't have admitted it, but I want to say to you, without throwing any boquets at the board of managers or the governor, that the Iowa State Fair is looked upon as the best conducted, the most worth-while organization of its kind in America. And why? There is no more reason why the Iowa State Fair should be where it is today, than there is for the fair in Illinois or Indiana, or Wisconsin or Minnesota or Missouri being where they are, so far as the states themselves are concerned, for they are all equally good states. There is not one iota of reason why you should have a better fair than those states, but there is a difference, and the difference is that they have permitted from time to time politics to get into them. I mean politics to this extent—they have felt that the organization was running for the express purpose of giving somebody a job. And, gentlemen, that is the only thing in my opinion that has put the Iowa State Fair where it is today. You have tried to conduct it as a business proposition.

And that is why I think you people in Iowa are to be congratulated and it is a fact which is recognized by the American fairs and expositions, and it is the truth, that Iowa is looked upon as standing foremost of all the excellent state fairs and expositions in this country.

I thank you!

The Chairman: This completes our program. The next will be the report of the Committee on Credentials. Mr. Mullen is chairman of that committee. The secretary will not read the report of the Credentials Committee and call the list of members who are entitled to vote.

REPORT OF COMMITTEE ON CREDENTIALS.

We, your committee on credentials report the following list of delegates entitled to vote at the State Agricultural Convention, December 12, 1917.

JOHN P. MULLEN,
H. C. LEACH,
E. G. STRONG.

FARMERS' INSTITUTES.

Calhoun County	B. E. Morton, Rockwell City
Cerro Gordo County	R. A. Holman, Rockwell
Franklin County	Earl Ferris, Hampton
Franklin County	T. W. Purcell, Hampton
Page County	E. G. Strong, Clarinda
Poweshiek County	Geo. T. Stone, Brooklyn

SHORT COURSES.

Madison County	W. D. Patterson, Winterset

COUNTY AND DISTRICT FAIRS.

Adair County	F. A. Gatch, Greenfield
Adams County Agricultural Society	F. G. Reese, Corning
Benton County Agricultural Society	J. W. Hanna, Vinton
Black Hawk-Cedar Valley District Fair and Exp.	H. S. Stanberry, Cedar Falls
Black Hawk Dairy Cattle Congress	E. S. Estel, Waterloo
Bremer County Fair Association	J. W. Bennett, Janesville
Buena Vista County Agricultural Society	Roy H. Wilkerson, Alta
Calhoun County Fair Association	C. G. Kaskey, Manson
Calhoun-Rockwell City Fair Association	F. M. Griffin, Manson
Cedar County Fair Association	C. F. Simmermaker, Tipton
Cerro Gordo-North Iowa Fair	Chas. H. Barber, Mason City
Clayton-Strawberry Point District Fair Society	B. W. Newberry, Strawberry Pt.
Clinton County Agricultural Society	G. H. Christenson, DeWitt

Davis County Agricultural Society	H. C. Leach, Bloomfield
Delaware County Fair	E. W. Williams, Manchester
Hardin County Agricultural Society	W. R. Scholfield, Eldora
Henry County Agricultural Assn	F. B. Montgomery, Mt. Pleasant
Henry-Winfield Fair Association	Theodore Russell, Winfield
Kossuth County Agricultural Society	S. D. Quarton, Algona
Lucas-Derby District Agricultural Society	Herman F. McCollough, Derby
Mahaska-Southern Iowa Fair and Exposition	W. I. Bean, Oskaloosa
Marion-Knoxville Fair Association	Seth Way, Knoxville
Marshall County Fair Association	W. M. Clark, Marshalltown
Monona County Fair Association	N. W. McBeath, Whiting
Monroe County Fair Association	W. B. Griffin
Page-Shenandoah Fair Association	H. H. Hatcher, Shenandoah
Page-Clarinda Fair Association	J. C. Beckner, Clarinda
Pocahontas Big Four Fair	O. A. Mullen, Jr., Fonda
Poweshiek-Grinnell Fair Association	I. S. Bailey, Jr., Grinnell
Sac County Fair Association	W. F. Weary, Sac City
Story-Central Iowa Fair Association	E. H. Graves, Ames
Union County Agricultural Society	B. M. Breed, Creston
Wayne County Agricultural Society	F. B. Selby, Corydon
Winneshiek County Agricultural Society	R. E. Bucknell, Decorah
Woodbury-Interstate Live Stock Fair Association	Joe Morton, Sioux City
Wright County Agricultural Society	Ed Hood, Clarion

COUNTIES IN WHICH NO FAIRS WERE HELD.

Clarke County	J. E. Daniel, Osceola
Decatur County	C. W. Hoffman, Leon
Franklin County	F. H. Dirst, Hampton
Ida County	Wm. McKay, Ida Grove
Madison County	W. H. Maxwell, Winterset
Polk County	J. A. Backman, Des Moines

STATE BOARD OF AGRICULTURE.

EX-OFFICIO MEMBERS.

Governor	W. L. Harding, Des Moines
State Dairy and Food Commissioner	W. B. Barney, Des Moines

OFFICERS.

President	C. E. Cameron, Alta
Vice-President	O. A. Olson, Forest City
Secretary	A. R. Corey, Des Moines
Treasurer	W. W. Morrow, Afton

DISTRICT MEMBERS.

First District	C. H. Tribby, Mt. Pleasant
Second District	E. T. Davis, Iowa City
Third District	E. M. Reeves, Waverly
Fourth District	E. J. Curtin, Decorah
Fifth District	Cyrus A. Tow, Norway
Sixth District	T. C. Legoe, What Cheer
Seventh District	C. F. Curtiss, Ames
Eighth District	F. E. Sheldon, Mt. Ayr
Ninth District	Chas. Escher, Jr., Botna
Tenth District	J. P. Mullen, Fonda
Eleventh District	W. I. Pike, Whiting

Mr. Lauer moved the report of the Committee on Credentials be adopted. Seconded by Mr. Griffin. Report was then unanimously adopted by the convention.

Mr. Curtin: It occurred to me that Mr. Lauer's suggestion of this morning might be brought up at this time. I judge from the report of the credential committee that about thirty fairs responded out of the ninety-four fairs that receive state aid. If they don't take any more interest in this association than to get state aid, I believe they should be cut off from receiving state aid, and I think now and here would be a good time to ask the legislative committee of the Iowa State Fair Association to get an amendment to the law whereby state aid will be handed out after this meeting. It is a shame that only thirty fairs should be represented here at this meeting and I would like to see something done along that line.

If it would be in order, I move that the legislative committee of the State Board of Agriculture be asked to prepare a bill to the effect that the drawing of state aid by county agricultural societies be made contingent upon their being represented at the annual meeting here in Des Moines by at least one delegate.

Mr. Morton: I second the motion.

Mr. Stanberry: In the report of the Resolutions Committee I have already provided for that, and we will present that to the meeting here. Of course, that would not of necessity have to supersede this.

Mr. Curtin: Then it had better come through the Resolutions Committee first.

Mr. Morton: I think this is of sufficient importance to spend time on it now. The report of the Resolutions Committee would tend to bolster up the Governor and this association in the matter. If the Committee on Resolutions make the report as Mr. Stanberry says it will, I think it will bolster up this proposition.

The Chairman: Don't you think in due respect to the Committee on Resolutions that we should hear that report first?

Mr. Morton: What I say is that I think this motion is of sufficient importance to have a recommendation not only in the report of the Resolutions Committee, but also a separate motion by the association.

Mr. Lauer: Would not that be better to come under the head of new business? And then it would follow the report of the Resolutions Committee?

The Chairman: I am sorry that you get this question in this condition. I shall have to follow the rules, in that it is new business, and order that this matter be presented following the reading of the report of the Resolutions Committee.

REPORT OF COMMITTEE ON RESOLUTIONS.

To Members of the State Agricultural Association:

After listening to the gratifying reports of President Cameron and Secretary Corey, we most heartily commend the management of the Iowa State Fair for the excellent showing made this year, which establishes a high mark, both in point of attendance and receipts, which will be an incentive for future emulation—and inspiration unmeasurable—for all co-workers in the worthy pursuit of presiding over the destinies of county, district and state fairs.

Therefore be it Resolved, That we extend our hearty thanks to the officers and directors of the Iowa State Fair for their untiring efforts and efficient management, and pledge to them our co-operation and support to maintain the worthy standard set by the 1917 fair.

We further believe that there should be greater interest shown by the county and district fair associations throughout the state by representation at these annual meetings.

Therefore be it Resolved, That we recommend that such legislation be brought about as to require personal representation at the annual meeting of the State Agricultural Convention, and that this be made a part of the conditions for receiving state aid.

We learn with deep regret of the death during the past year of G. S. Gilbertson, former treasurer of the Iowa State Fair, and of W. H. Knight, long time secretary of the American Trotting Association.

Therefore be it Resolved, That we extend to the relatives of the deceased our sincere sympathies and condolence and spread these minutes on our records.

We realize the condition of our country at the present time in respect to war with other nations and pledge our most loyal support to President Wilson and our Nation, and extend our hearty co-operation by loaning the resources of our fairs to further the interests of this great conflict to the end of autocracy and a successful culmination of the United nations for democracy.

Respectfully submitted,
H. S. STANBERRY,
S. D. QUARTON,
E. W. WILLIAMS,
Committee on Resolutions.

Mr. Keskey moved the report of the committee on resolutions be adopted. Motion seconded and the report as read was unanimously adopted by the convention.

Mr. Chairman: Any further reports of special committees?

Mr. Curtin: Would it be in order to take my motion up at this time?

Mr. Chairman: Yes, sir, it would.

Mr. Curtin: Then I repeat the motion I made before. That is I move the legislative committee of the State Board of Agriculture be asked to prepare a bill to the effect that the drawing of state aid by county agricultural societies be made contingent upon their being represented at the annual meeting here in Des Moines by at least one delegate.

Mr. Morton: I second the motion.

Motion was unanimously adopted by the convention.

On motion the convention proceeded to elect officers and members of the State Board of Agriculture.

Vice President Olson took the chair and called for nominations for President.

Mr. Morrow: I wish to place in nomination a gentleman who has been tried and not found wanting: a man who has been at the head of the state fair managers of the country. I wish to place in nomination the name of Hon. C. E. Cameron of Buena Vista County as president, to succeed himself.

Nomination seconded by F. M. Griffin. Mr. Morrow moved if there were no further nominations that the rules be suspended and the vice president instructed to cast the votes of the delegates present for Mr. Cameron as president. Motion seconded and unanimously adopted. The vice president cast the sixty-three votes of the convention for Mr. Cameron and declared Mr. Cameron duly elected president for a term of one year.

Mr. Cameron: Mr. Chairman, I don't know how to thank you for this continued confidence in me. When I spoke this morning of my dream of 360,000 to pass through the gates of the Iowa State Fair being realized I thought that now I could step down and give place to another man. But now that you have re-elected me I don't know what my dream will be, for anything is possible with the assistance of the loyal people of this great state. I want to say to you that so far as I am concerned I will leave no stone unturned to keep the Iowa State Fair at the head of all the fairs of the United States.

Mr. Cameron in the chair called for nominations for vice president. S. D. Quarton nominated O. A. Olson of Winnebago county to succeed himself. Motion seconded by C. G. Kaskey and others. Mr. Kaskey moved if there were no other nominations that the rules be suspended and the secretary instructed to cast the vote of the organization for Mr. Olson as vice president to succeed himself. Motion seconded by Mr. Griffin and was unanimously adopted. The secretary announced he had so cast the sixty-three votes of the convention and Mr. Olson was declared duly elected vice president of the State Board of Agriculture for the term of one year.

Mr. Olson: Gentlemen, I thank you.

Nominations for member of the board from the first district were next called for. Mr. Lauer nominated C. H. Tribby of Henry county to succeed himself. Motion seconded by Mr. Simmermaker. Mr. Purcell nominated Harry O. Weaver of Louisa county. Motion seconded by Mr. McBeath. There being no further nominations the president declared nominations closed and instructed the delegates to prepare their ballots. The president named as tellers W. S. Beam of Mahaska county and Earl Ferris of Franklin county. The count of ballots resulted as follows: Harry O. Weaver 41; C. H. Tribby, 22. The president declared Mr. Weaver elected for a term of two years to represent the first district.

For member of the board from the Third District C. H. Barber placed in nomination Mr. Elmer Reeves of Bremer county. Motion seconded by Earl Ferris. On motion of Mr. Stanberry, seconded by Kaskey, the rules were suspended and the secretary instructed to cast the full vote of the convention for Mr. Reeves to succeed himself as member for the Third District. The secretary announced he had so cast the sixty-three votes of the convention and Mr. Reeves was declared duly elected member of the State Board of Agriculture from the Third District for the ensuing two years.

Nominations for member from the Fifth District were next called for. Mr. McBeath nominated Cyrus A. Tow to succeed himself. Motion seconded by Mr. Mullen. Motion was made by Mr. Clark, seconded and unanimously adopted that the rules be suspended and the secretary directed to cast the vote of the convention for Mr. Tow to succeed himself as member from the Fifth District. The secretary so cast the votes and the president declared Mr. Tow duly elected member of the State Board of Agriculture from the Fifth District for the ensuing two years.

For member of the board from the Seventh District Mr. Graves placed in nomination C. F. Curtiss of Ames, Story county. Mr. Davis seconded the motion. Motion was made by Mr. Mullen, seconded and unanimously adopted that the rules be suspended and the secretary directed to cast the vote of the convention for C F. Curtiss to succeed himself as member from the Seventh District. The votes were so cast by the secretary and Mr. Curtiss was declared duly elected member of the State Board of Agriculture from the Seventh District for the ensuing two years.

Nominations for member of the board from the Ninth District were next in order. The name of Chas. Escher, Jr., of Shelby county was placed in nomination by Mr. Davis. Motion seconded by Mr. Barney. Mr. Davis moved if there were no other nominations that the rules be suspended and the secretary directed to cast the vote of the convention for Mr. Escher to succeed himself as member from the Ninth District. Motion seconded and unanimously adopted by the convention. The secretary so cast the votes and the president declared Chas. Escher, Jr., duly elected member of the State Board of Agriculture from the Ninth District for the ensuing two years.

For member of the board from the Eleventh District Mr. Morton placed in nomination the name of Harold Pike of Monona county. Seconded by Mr. Sheldon. Motion was made by Mr. Sheldon, seconded and unanimously adopted that if there were no further nominations that the rules be suspended and the secretary instructed to cast the vote of the convention for Mr. Pike to succeed himself as member from the Eleventh District. The secretary announced he had so cast the sixty-three votes of the convention and Mr. Pike was declared duly elected member of the State Board of Agriculture from the Eleventh District for the ensuing two years.

There being no further business motion was made and seconded, and unanimously adopted, that the convention adjourn.

PART III

Excerpts From the Report of the Tenth Annual Meeting of the Iowa Association of County and District Fair Managers.

December 11 and 13, 1917.

The Chairman: Now, gentlemen, we will please come to order. I have been coming to this meeting for the last six or seven years and it is a great pleasure to me to see so many familiar faces, as well as the new ones.

We have a topic this afternoon that looks very interesting. Round-table Talks, I think, is the most interesting part of the program, and the first subject will be, "Are Fairs Drifting to Amusements?" by Luther Aasgaard, leader.

ARE FAIRS DRIFTING TO AMUSEMENTS?

Luther Aasgaard: Mr. President and Fellow Fair Managers of Iowa: Our president has just said this is a most interesting subject. Our good secretary assigned me this subject a few weeks ago, but on reading the Des Moines Register on Sunday morning I learned for the first time that I was here to talk on the interesting subject of "Are fairies drifting to amusement?" Of course, I am a bachelor and I am supposed to be a good bachelor, consequently not supposed to know anything about "fairies." However, a good fairy told me last night before leaving home that to insure the success of our fairs, it might be well to devote more time and attention to cattle and hogs and thereby stay closer to the preamble of our constitution.

I would like to talk about fairies, but I think it better to speak on a subject more in line with what I consider a great problem. Are we drifting to amusements? I think the question is "What is the proper ratio of amusement to the great object?" I don't believe there is one of us here that would pretend he could get by with a pumpkin show as they did years ago. If you want to get a typical fair, you have to go to the old countries; but we are an entirely different people than those in the old countries. We have got to be amused. This would be a good time to appeal to the patriotism of the people, and by responding to the desires of our patrons you greatly enhance your chances for success. Under those circumstances, who is going to stake his plant and reputation on running purely an agricultural fair? For that is precisely what you do, because if you don't run a purely agricultural fair you are going to drift to amusement.

The question then arises as to how far the fairs of Iowa are willing to go to attract the people, as an advertising proposition, to see their horses and cattle and hogs. I think it is an undeniable fact that we are drifting to amusement, but there is no one stronger for amusements than I am.

Now, of course, I don't want you to understand, or to infer from what I may say, that this meeting couldn't run without me, for I am not like the story that my father told me years ago of a certain private in the ranks during the Civil War, named John O'Flaherty. Private John O'Flaherty was a member of the famous fighting 13th Wisconsin, and he was one of a few Irishmen in a Norwegian regiment. The story goes that before the siege of Vicksburg, the 13th Wisconsin was assigned to assist in the work. The regiment was lined up ready for action, and word was being awaited from the commander to go into action, when General Grant hurried down in front of the regiment and asked, "Is Private John O'Flaherty in the ranks?" and the captain said, "No, General," and the General walked back and forth a while and then again asked about Private John O'Flaherty, with the same reply from the Captain. The General was becoming impatient and soon again asked: "Is Private John O'Flaherty in the ranks?" and the Captain shouted, "John O'Flaherty is here, General," and then General Grant said, "Then let the battle proceed at once." So, as I said before, I do not feel that I bear that relation to this meeting.

Are fairs drifting to amusements? Last fall I visited a great many fairs in southern Minnesota and northern Iowa. I would not call on the secretaries, but just dubbed around seeing what I could. I would go to some fellow and say, "How is this fair?" and in that way got my information from patrons. I went to one fair and when I inquired around I found that the people were not satisfied; they said, "They have a few old horse races here, and that's about all," and then the question came to my mind as to whether it is really worth while to run a strictly agricultural fair. The question comes back to this, "Are we fooling ourselves when we run an agricultural fair?" I think the question for us is, "Is the proposition 50-50 or 4-1?" Our agricultural program cost us $1,000 and our amusement program cost $4,000.

My business is the newspaper business, and I like to come here and mingle with you and get your ideas, but if you want to make a success of the newspaper business or any other kind of business, don't give them what you think they ought to have, but *give them what they want.* As I said before, this is a good time to appeal to the patriotism of our people to limit our amusements. This is war time, and as you know if we ever were a serious-minded people we are now, and yet normally we are not a serious-minded people.

The question then comes right down to this point, "How much or how little shall we spend for amusements?" I believe that is the topic that should be considered, and that is all I have to say. I thank you.

The Chairman: Gentlemen, this is your leader on this subject. We would like to have some more talks along this line. Draw out the subject of what you think about this idea of drifting to amusements. Who shall we hear from first? Let's hear from Mr. Mullen.

J. P. Mullen: Mr. President and Gentlemen of the Convention: I have not given this subject much consideration because I have not had time for preparation, nor can I give you much from practical experience in the conduct of fairs, for even that is limited. If I was a singer I might sing something, but I can't even qualify in that direction.

Now, I think that the gentleman here made one very pertinent statement, one that I think can be emphasized, and that is give the people what they want. In analyzing that proposition, you run into this condition; one community will want one particular kind of attraction and another will want another; one community is in for sports, light amusements and laughing features, and another community is more serious and takes more kindly to the development of animal husbandry or the agricultural exhibits, or possibly the educational exhibits. So it is quite a problem after all for the secretary and the management of a fair to satisfactorily determine the ratio of amusements with relation to other features.

I realize that in the community where I live, the demand has heretofore been largely for free attractions and lighter features of a fair; also horse races, to a large extent. During my tenure as secretary I made a strong effort, partially successful too, to bring out the exhibit of cattle, horses, hogs, grains, etc., and I especially was quite successful in inducing the county superintendents to take charge of and put on good educational exhibits, which we have retained since that time. I did that because of the incentive it was to the school children and the parents in the town and country, and while it was an educational feature it still attracted so many people that it was noticeable at the box office, and that is something to be looked after.

It is also true that our fair is a good horse-race association, and in the horse-race meets we have been very successful, and of course that attracts. So, as I said in the beginning, it is quite a problem for the secretary to determine what ratio the light amusements should bear to the proposition to entertain the public. Different communities want different attractions, and it seems to me that the secretary in the community should judge what that community wants.

The Chairman: This looks to me like too good a subject to pass. Let's hear some more discussion along this line. I dislike to call on any one. I would like to have you all feel free to discuss the matter like in a good old-fashioned Methodist camp meeting and tell what you think about it. I would like to know if any one here is of the opinion that one can run a strictly agricultural fair. That means cutting out everything except exhibition features. We have that under consideration at my place—running a purely agricultural fair. I would like to know if any one else thinks it can be done.

R. T. Hetwold: I am connected with the Farmers' Institute at Brooklyn in Poweshiek county. We have no amusement whatever at Brooklyn —a strictly agricultural fair. We have 150 horses and colts, hogs and cattle and poultry; we make no charges to get exhibits, and no charges for stalls or entries. All the charges made is 25 cents admission to the spelling contest held during our institute, and we have a large attendance that is drawn from all over. I would say that the opinion of folks who have attended our institute is that it goes ahead of many county fairs. We have no way of getting expenses, it is all subscribed. We meet some expenses by getting badges and selling them above cost, and we have very great success with our institutue there; it is getting larger every year, and our corn exhibit in particular is getting better every year.

The Chairman: Is there any more discussion along this line?

Mr. Bennett: I want to say just one thing along this line. Years ago I belonged to a fair association in Bremer county, and at that time they got the notion that they must have a purely agricultural fair. They did, and it dwindled and dwindled until it had only two exhibitors left. One fellow brought a pumpkin and the other fellow brought a cow, and the cow got loose and ate the pumpkin, and that ended the fair.

I notice that the more attractions you have, the bigger the crowd, and the only danger is that we are going to drift too far that way. I think each fair should settle that question for itself just how far it ought to go in this matter; but I think we never can get back to the old strictly agricultural fair.

Seth Wade: I am from Marion county, and we had about the earliest fair in the state. We dwindled along for a while and then started out on the Sunday school basis and ran an agricultural fair until now we have no fair whatever. This year we organized and have a real fair, with horse races and amusements of all kinds, and had good success. I am of the opinion that we cannot run a practical agricultural fair in Iowa.

The Chairman: Anybody else? Let's hear from Mr. Stanberry of Cedar Falls on that subject.

H. S. Stanberry: This question of trying to run a strictly agricultural fair can best be answered by asking any one in the state of Iowa, or any other state for that matter, if they ever conducted a strictly agricultural fair and succeeded. I don't believe any one in the state of Iowa ever tried to run a strictly agricultural fair and succeeded. Some of them have kidded themselves for a year or two that they were getting by, but eventually they died out.

You cannot run a fair without making the features act as a balance-wheel one for the other, and the fair as a whole should be a magnet that will draw the people. A strictly agricultural, or a strictly educational fair will not draw all the people, though it will draw some. I am sorry to say that the American people are looking for amusement, and incidentally they will look at the educational feature after they get there. There are only a few who go for strictly educational reasons, so that to cater to them alone would spell failure to your institution.

The limit of amusements, as set out by Mr. Bennett, is measured only by the community and the drawing powers you have within your jurisdiction. I think that the entertainment end of a fair should be figured out in a scientific way, or in a common sense, business way, so that you spend a certain amount of your receipts for amusements and attractions, a certain percentage for your exhibits, and a certain percentage for your overhead, and so on through. In that way, when you get it properly figured out, you will find a profit at the end of the year.

We can all have our personal views, but the proof of the pudding is in the eating of it, and at the end of the week when you count up your money in the sack is the thing that proves your success or failure.

Mr. Gamble (Knoxville): My experience as a fair manager has been limited. It has been on probation, so to speak, for just this year. We have come out victorious, paying all premiums and paying debts, and all things of that kind. The question of amusements came up several times in our meetings of the board of directors. Of course, the farmers thought we had better look to the agricultural society, and the town people looked at the other side of the matter, so we compromised and split 50-50, spending about $2,000 for amusements and $2,000 for exhibits. If we had just depended on the agricultural society feature, at the end of the week we would have been in the hole some $3,000 or $4,000. If you can get what the people want most, you can bet your life at the end of the fair you will have a profit.

Another thing; you can advertise all your exhibits, your fine stock and hogs and cattle, having an abundance of exhibits with every stall in the barns and sheds full, but you will notice that after your patrons see them they go out to the grand stand and see the horses go by.

The Friday or Saturday night at the close of the fair is what counts. I am in favor of attractions and amusements, and if you give the people what they want you are going to succeed.

The Chairman: The next number on the program is entitled, "Various Methods to Build up a County Fair," by Mr. F. A. Gatch, leader.

VARIOUS METHODS TO BUILD UP A COUNTY FAIR.

Mr. F. A. Gatch, Greenfield: Mr. President and Fellow Fair Members: The subject assigned to me, "Various Methods to Build up a County Fair," makes me think of an old-timer in Adair county who one day told me of their first fair. He said that when they had their first fair in Adair county, he drove up in front of the hitch-rack before the only store in town, tied his horse, and not seeing anybody about asked the merchant, "I thought this was fair day; where's the folks?" And the merchant said: "Well, we was going to have it today, but we postponed it to tomorrow because we didn't have any buildings up." So he waited around and the next day he attended the fair, at which, he said, there were sixteen or eighteen people present. All the grains and vegetables and other exhibits they had were placed in the bottom of a wagon box, and the stock was in a rail pen. This was the first fair in Adair county.

In taking up various methods of building up a county fair, it is a pretty hard proposition for me to get up and try to tell men of your age and experience, who have had probably ten, fifteen, twenty-five, thirty or forty years' experience, how to build up a county fair, and if I did know how I probably wouldn't be here today; I probably would be up in Bremer county.

The first thing that I put down in my book is to keep down the expense. I am going to give you a topic and will want to hear discussion on some such subject as this, "The length of a fair and how it is determined." As of course, it makes a lot of difference whether you are putting on a three or a four-day fair, or a fair of any length. When I say a two-day fair, I mean Tuesday, Wednesday, and Thursday, because Tuesday is entry day; and a three-day fair is Tuesday, Wednesday, Thursday, and Friday. It makes a lot of difference whether you have a town of 3,000 population, or whether you have a town of ten or fifteen or twenty, thirty, or forty thousand population. The length of the fair depends upon the number of people you can draw on, and you have got to get the people there to make your fair a success. If you have only a limited number of people to begin with, and can get them there in two days, it is to your advantage to make the fair short. In this day and age of rapid transportation you have no difficulty in getting the people in, and if you try to put on the same sort of program as would be used in a large town, you are going to have your troubles.

Along the same line of reasoning is the matter of special features. If Mr. Brown goes today and enjoys the fair, when he returns home he says to Mr. Jones, "Go tomorrow; they are putting on a good program." A good first day is good advertising, and if you can change your program for tomorrow, you have an added advantage; but it's a pipe that if Brown goes home on the first day and tells Jones, "Nothing doing; only a few horse races," there is not much encouragement or inducement there for Brown to go back, and no incentive at all for Jones to go. If you have a good thing, put it on the first day, and then Brown will tell Jones what it was and they will both be there for the next day.

Now, gentlemen, I will begin at the big gate and follow right through to the end. I want to start this argument for you people to follow up, beginning at the big gate. I don't care, gentlemen, if you have a $20,000 or a $100,000 gate, or if you have a two-day, a one-day or a four-day fair, when the gates are closed at night and you check up the money, that's the proof of your success or failure. If there is a leak in the bottom somewhere your bank account is not going to fill up very fast. If you have a leak at the big gate, I don't care how many boosters you have got, there is something going wrong, and one of the greatest leaks to the county fair is the pass-out ticket.

This pass-out ticket is a ticket similar to that used in Savannah, Clarinda, Burlington, Shenandoah, Greenfield, Maryville, and many other places. Nine out of ten of you use the same form of passes all the way through, and if any man wants to beat them in your fair he can beat you at every turn. When a man is busy at the gate he hasn't time to examine to see whether a ticket has the name of your fair stamped on it, or not, and there is the biggest loss—the privilege ticket. As I said before, nine out of ten use the same privilege ticket, and nine out of ten people the country over are looking for something for nothing. At fair time they want to get in for nothing. I don't care how good a friend he is of yours, he is not an extra good friend or he wouldn't ask you for a ticket; but they are mooching for those tickets and they are looking for a chance to get in cheap.

The first day of the fair a concession man from Creston came to me, and I had never seen him before, and he said, "Gatch, I always believe in having a square deal," and I said, "What have I done to you?" He said, "Nothing, but these fellows are raiding you here and stealing you blind, and it's not right, and I am sorry to say it, but some of our boys from Creston are in the game," and I said, "What's the deal?" and he said, "They're taking the privilege tickets and bringing fellows in here at 25 cents apiece." He said, "I'm coming to you as a friend; I know these boys are doing it, and I think you ought to stop it." I went to Mr. Foster, the president, and told him the trouble, and he said, "How are you going to stop it?" I said I didn't know but I would stop it. When I got to the gate I stood there and watched the procession of privilege tickets going in, and the longer I stood there and thought of it the madder I got. If a concessioner said he had four men, there were no questions asked and he got four tickets, and so it went.

Several days after that, in cleaning up the grounds, I picked up a check which had a stamp on it marked, "Paid." I looked at it and said, "I wonder why a man can't take that stamp and figure the thing out." I went to Guthrie Center a few days after that, and the first thing I said to Mr. Edwards up there was, "Bill, beat the pass, and if you don't they'll clean you out." He said, "How will you beat it?" and I said, "Go out and get a bank stamp and stamp them on the arm." So we got the First National Bank stamp for one day and when they came up and wanted passes I said, "No passes here; nothing doing," and picked up the bank stamp and told them to hold out their arm so that I could stamp them, and they said, "Nothing doing, we don't want that." The next day I got another stamp and stamped them on the hand. Any fair that is using these tickets and throwing them to the wind, as we did in the past, is bound to get stuck. But with this stamp, whenever a man comes to the gate you stamp him on the arm or stamp him on the hand, and I'll say that no man got by that gate unless he was stamped. There, gentlemen, I consider is one of the best points, because you have got to get the money at the big gate.

I have been secretary three years and have had only three years' experience, but I am giving you my experience from observation. When I was elected secretary I said, "I would like to be secretary just once, just to show you fellows that a man can get exhibitors there if he will get out and ask them," and, gentlemen, I asked them. Take the Chester-White pen; Mr. Thornburg, professor of animal husbandry at Ames, said that he went out judging in July and judged until the fair season was over, and he said Adair county had the best exhibit of hogs of any fair that he had attended, outside of the state fair; and that, gentlemen, was simply because we went and asked them to come and participate in the fair and bring their stuff to exhibit.

Another thing that helped to build up our fair was we never promised any concession man, or any horseman, or any exhibitor anything that we didn't figure on fulfilling. If we said, "John, we'll use so-and-so, no matter what it costs," we would absolutely abide by our agreement.

Another point is fair treatment to the exhibitor, the concession man, and the horseman. When I read the account relating how Mr. Lauer had banqueted his concession men, I said, "I'll take off my hat to you," and in a conversation with the Mt. Pleasant man he said, "We banqueted about 350 horsemen," I said, "I'll take off my hat to you, too," because they had never done a better thing in their life. Gentlemen, you are not buying any better amusement or any better attractions than when you spend three or four dollars to get Mr. Horseman to come out to the races. When the bell taps at half past one, go look in your Midway, and on the race track, and in the grand stand, and see where the people are. When Mr. Free-act man comes out and sets up on your center field and says, "We've got to get a tent for a dressing-room," you get him one and it's all right, and you never charge him a cent; but when Mr. Horseman comes in there's nobody to care for him, the track has not been cleaned up since last year, he is charged $2 stall rent, a man comes in and holds him up for hay, the drayman jumps the price of draying 50 per cent, and the auto man hauls him out and holds him up—why? because he is not a free-attraction man, or anything of that kind. You are paying your free-attraction man $1,200, he takes the $1,200 and goes home with it; but you pay the horseman $1,200 and the town gets 40 per cent of it back again. And I say, treat these men all alike hereafter.

Another thing that we have is a loving-cup proposition, or prize cup. We went to the banks—we have three—and each one of the banks gave us a cup worth about $25. We had three large cups and we offered them for the best cow or heifer, the best sow or colt, and the other for the best horse or bull, and any one winning a cup twice in succession would hold it permanently. The rivalry developed among the breeders there has been an inspiration and incentive to them to improve their stock, and has been of advantage to us in getting out the exhibits. Last year the Duroc-Jersey's won it; this year it was a battle between the Durocs and the Poland China's, and then it centered on the Poland China's, and then among the men of that breed there was competition until the winner was chosen. In the cow class, the Angus man won the cup last year and again this year, so that next year we will have to get another cup. Our cups given by the banks have been one of the best events that we have ever pulled off in the county fair.

Another thought I would like to have you take up is the 50 cent ticket. We charge 50 cents at the gate and that takes you in everywhere, except that we charge 15 cents at the grand stand; but 50 cents is charged at the gate for one ticket. You are not held up here and there after you get into the ground; you just pay your price at the gate and that takes you everywhere. If you want to go in at 10 o'clock in the morning, you can stay in until tomorrow morning at daylight, if you want to. We consider this a good thing in cutting out objectionable features, in keeping the concession people in line with the crowd and in keeping them in line with the fair.

The baby-health contest. There is a proposition that any one of you can afford to take up, for it is as good a feature as anything we have. I have watched it around at all the fairs I have attended, and I figure it is one of the best of the new features. I don't believe any of them are over three years old, and they have been very successful.

Then there is the matter of night shows. Good night-shows are a feature that attract many people. A man pays 50 cents to get in the grounds in the morning, and as long as he stays on the ground he stays for the night show. We don't say that from six o'clock on it will cost this man 25 cents more; but that 50 cents entitles him to the day and night show, and he goes and comes as he pleases; but if he goes down town after 3 or 4 o'clock then he pays to come back in.

Our pig clubs, our corn clubs, our baby beef contests, and features of that kind I think most of you have taken up. But one thing that has been the most encouraging to us has been the sheep proposition. We have forty-two acres in our fair grounds at home, and the most income we have ever gotten out of it heretofore has been $125 a year. Last year we thought we would take a shot at the sheep proposition, so we went out and brought fifty natives and fifty westerners. The fifty natives were without lambs and the 50 westerners were with lamb. We put them out at the fair ground about the first of March. We bought fifty bushels of oats and some clover hay, and hired a man at $25 a month to take care of them until September.

Before I get ahead of my story I want to say this: Heretofore when I went out and commenced to get the grounds in shape about September 1, I would find the race track about shoulder high with weeds, all corners of the grounds grown up in weeds, and around the barns and stable was all weeds, and as I would look over that sea of weeds I would say to myself, "Here's where I want to quit;" but this year I went out on the first day of August and it looked just like somebody had mowed it, for there wasn't a weed in sight, and the fair grounds were never in better condition.

When we checked up after disposing of that 100 sheep and their increase, and after paying our man $25 a month, paying for the hay and feed and everything, we had a balance of $500 to our credit.

Now, I would like to have you fellows give more discussion to this than we had on the other subject.

The Chairman: Mr. Reeves, let's hear from you

Mr. Reeves: In building up a county fair the first thing you want to consider is keeping it well-balanced. Unless a fair is well-balanced it will interest only a small part of the community. If it is well-balanced every one is interested in something and that will bring everybody there. If you want your fair to be interesting, you will have to have stock of all classes represented, and you cannot have stock represented without personally soliciting stock from the owner. The secretary or the committee must notify owners long enough before the fair to allow them to pick the animals for the fair and get their promises to show them at the fair.

Often you can interest farmers who never thought of exhibiting stock at a fair and get them to come. A great many of them will promise to come and not show up, but some new men each year will show up if they are properly solicited. Then you want your farm products, and that has to be looked into in the same way. The managers of the fair can make all arrangements for attractions of all sorts that are necessary, and that is one thing that they can arrange almost positively. If you buy your attractions of the right man, he can furnish you just what you buy, and you can know beforehand that it is satisfactory and will balance up the amusement side of your fair.

You don't want your racing to overbalance the other things, but you do want some good racing. I never saw a crowd that didn't appreciate good racing. If you can work in some sort of home talent in the racing, so much the better. You can have a mule race. At our fair last fall two little girls, twins, daughters of one of our officers, rode in a pony contest, and the race was so close that the judges were unable to decide between them, so they were asked to change ponies, and again he was unable to decide the winner. Then the judge thought he would set a stunt that would settle the money proposition, and he had them get off of their ponies and then run and jump on their ponies, and the one that would get on the pony first would be the winner, and they got on the ponies at absolutely the same time, so he divided the premium. This competition among those girls interested the crowd and they were well satisfied with the arrangement. A great many little things like that can be worked in to add to the enjoyment and interest of your patrons.

One thing we have found in our fair to be a good feature is the matter of music. We have had some outside bands at our fair that have given us excellent music, but the crowd at a county fair is not looking so much for high-class music as for other things. If the people in a township know that their band is going to play on a certain day, they will be there to hear it. It is not so much the music that the other band is playing as it is the fact that the home band is the official band of the day. So by changing around and getting different bands in your county you can get the different people in different parts of the county interested and get them to attend the fair.

One thing that I find very short in the shows at the county fairs I have attended is fruit and flowers. There should be work on these features, so that these exhibits will make a creditable showing to balance up the other departments. They can be worked up by advertising in the newspapers or asking people to prepare exhibits, or asking people to look up and see what they have to exhibit that might win some premiums. And I find that when once you get an exhibitor, you usually have that exhibitor year after year. One thing that can be done at the time of the fair is that the secretary and his helpers should look after the people and their welfare. That is something that wins their special attention and that helps to make the fair popular.

Another thing, the schools should have a large share of attention, some contest like the contest in arithmetic or spelling, or a contest in some other line will bring representatives from all parts of the county. It is well to have a free ticket to the school children on a certain day. We have found that to be a great help in building up a fair and getting attendance.

We would not think of running our county fair without a baby-health contest. You know that was started at the state fair only a few years ago, and it became very popular at once all over the country, and every fair that has been able to install the facilities has done so. I believe that is one of the most important movements that was ever made in the handling of a fair, whether state or county or district fair.

Now, one of the main requisites in building up the fair is to do everything on the square. Always give the people a little more than you promise to them in the way of accommodations, in races, free attractions, and all that. You must charge enough admission at the outside gate to pay your expenses, and you should count on a profit each year. People are satisfied and pleased to help with an institution that is prosperous, but if you place your admission fees at a rate which makes no profit people become dissatisfied and their dissatisfaction soon affects your whole fair.

The Chairman: Anybody else on this subject?

Mr. Jones (Linn). One thing that has not been touched on that we consider an attraction at our fair is exhibits put on by country clubs. The country clubs in our vicinity, Linn county, number probably twenty-eight or thirty, and last year we had I think fourteen exhibits from country clubs. These were all farm exhibits, and I think it was one of the most attractive features we had at the fair. It not only interested the people participating, but others as well. Those country clubs consist of from probably fifteen to thirty families to each club. Members of clubs exhibiting were of course very much interested, and the more persons you can get interested in a fair the more you can get at. The exhibits from these clubs practically are everything that can be raised upon farms. As a rule, from the time they are in place until the close of the fair, they are drawing attention all the time.

The Chairman: Anybody else wish to contribute to this subject?

Mr. Bennett: With regard to these country-club exhibits, I don't think the average county fair gives premiums enough for their farm and garden exhibits. I heard one woman ask another yesterday what premium she got at the county fair for her exhibit, and she replied that what she got didn't begin to pay her for the time and work she put on it. They have to plant the seed in the early spring and they have to be on the job every day in order to care for their exhibit. The fairs don't pay premiums enough for the work that the exhibitors have to do, and they will have to pay better for that branch of exhibits if they want to have success and encourage exhibitors.

The Chairman: The next subject for discussion is "The Effect of a Show or Carnival in Town Prior to or During Week of Fair—Legislate Against", by George W. Haynes, leader.

Mr. Schofield: I regret that I have not looked that matter up at all, and I will take just a minute.

Take it from our own experience, you remember that before the night show went into effect, we used to do a great deal of advertising for the opera house. Since the night shows have come into being these people who have followed these fairs still like to follow and reap part of the benefit of our advertising. Up in Hardin county we have had one company in there for some ten years. The last three or four years we have had night shows and they still come, and of course hurt our night shows to a certain extent. We have tried every way possible to keep them out, but owing to one of our leading citizens being interested in the opera house and the opera house controlled this tent show, we had some trouble until last year. We got together with the tent people and they showed on our free stage at night. That is, their tent show gave our free attraction on the fair grounds and it proved a big success, but in regard to the show for the fair ground I think that last year Mr. Barber went into it as far as the legislative end of it was concerned and if I am not mistaken I believe he found Illinois had some law with regard to that. We took it up at that time and tried to see if a law couldn't be made in this state to cover shows coming into the community during the week of the fair, and I don't think the matter ever went very far, but I believe that if a law could be passed in this state the same as Illinois it would be a great benefit to the towns or cities that are bothered with that sort of thing. As I understand it, the city ordinances cannot keep them out, according to law, on account of the claim that you cannot keep one out without keeping them all out. We had it looked up pretty thoroughly and as I understand it they couldn't do it. The only way it could be done was by state law, and if the legislative committee of this body could take that matter up I believe it would be a benefit to all fairs that were bothered that way.

The Chairman: Now, gentlemen, I believe this topic is one that appeals to all, and I would like to hear more discussion along that line.

Mr. S. D. Quarton: In North Carolina there is a law to the effect that no circus or carnival company can come within a certain distance—I don't know how many miles it is—of the exhibit of the fair association. It has been on the books of North Carolina for a long time. I happened to be over there two or three years ago when Miller Brothers' 101-Ranch were going to play eight or nine miles from there, and this law prevented their showing it, and the fair association compelled them to come inside the fair grounds and got their percentage for it. Several southern states have such a law that no attraction of that sort can be held within three or four weeks of the time for the holding of the fair without the consent of the fair association.

Mr. Schofield: I believe that every fair in time to come is coming to the night show. It is a success and I believe it could be made at the discretion of the fair association, and those that don't have a night show at this time before very long will be coming to it. After you have advertised for this show for a number of years they are going to stick by you whether you have a night show or not.

Mr. Rigby: I don't think there is anything that can be added to what has already been said. There is no question but what it is a detriment to the fair to have these counter attractions on the streets in competition with the night shows, and the only way in the world to keep them out is to stand in with the mayor. I know that so far as our town is concerned, while we have not made a special effort at all to have anything go on at the opera house or have dances downtown, as a rule our night fairs have been strong enough that it has not been profitable for those counter-attractions to stop in town at that time. I know that has been the effect, because this year the company that was there last year, when they found that we were going to have a night fair, refused to rent the opera house.

I don't know how to prevent this competition downtown if you want to pull it off, and I think the best policy for the fair association is to make night shows strong enough to override this kind of competition. I think to quite a large degree this will be true where the ticket privileges are as liberal as were outlined here today, where a man is entitled to see everything on the ground until he leaves, and then make the night admission liberal enough to draw the crowd. I don't doubt that a great many fairs would find it advisable to give everybody on the ground a night-show ticket, a free ticket to the night show and then charge, say, ten or fifteen cents, or whatever the regular charge is, at the grand stand. I think that will catch the people who have remained on the ground. I believe that is a good proposition, because if a man buys a ticket at the outside gate and gets a free ticket to the night show, it will be a comeon and he will use that ticket.

Mr. H. C. Leach: We don't put on a night show at our fair. We have talked a little about it at different times, but our merchants are very loyal toward the fair and we want to give them a chance too. While we don't bother them, as has been talked about here, our merchants are being hounded to death with one thing and another and I don't believe they should be asked to contribute to the maintenance of the fair.

I happened to be mayor of the city a few years ago when a circus man wanted to know what we thought of putting on a street fair during our fair, and I said, "According to our ordinance we can't refuse you, but I'll say this much; we can make it so objectionable that you won't enjoy the occasion," and I found from experience that they can't come to town unless they are wanted.

I believe this law we are talking about would be a good thing, but this is a big country and it is a loyal country. I believe we are hearing too much about passing a law to help this man or to help that man. I am not personally in favor of legislating too much for one class of people. We must make our laws so that each thing that you put on can stand under its own weight. Our merchants close at eleven o'clock in the morning and come to the fair. They work for it and boost for it, and then in the evening they open up and we let them have the crowd.

There is one theatrical troupe that has come to our town year after year and the boys come to me two or three months ahead and want to know if a certain troupe is going to come back to the fair, and it draws people from ten to fifteen miles.

I believe that each locality can control those things themselves better than if they take it up under a state law.

Mr. C. E. Cameron: I am very much interested in the discussion of our members here this afternoon, and I certainly have heard some very helpful remarks and suggestions about conducting fairs. I had my connection with county fair work at one time, and I know from experience what must be contended with. I was for sixteen years secretary of our county fair at home, and the biggest asset I found to the county fair was the loyalty of the people in the vicinity in which the fair was located.

Take up the question this gentleman spoke of, the question of counter attractions downtown. That can be regulated by the loyalty of the town. If the town does not believe in a fair, the county fair cannot be made a success. Take, for instance, Des Moines. When I first became connected with the Iowa State Fair, we used to have counter attractions; they used to open up the streets of the town and let in carnivals and have that kind of things here in Des Moines. When we commenced to put on night shows at Des Moines, we found we couldn't make a success if they put on a free attraction downtown. We went to the city council and talked the matter over with them. We said, "If this fair is not of more benefit to the people of Des Moines and to the business interests of Des Moines than this carnival company, then one or the other of us will quit." And I am very glad to say that the business interests of the city of Des Moines and the city council have shut out any attractions that interfere with the fair. We haven't asked them to close their opera houses because our fair runs eight or ten days and people who come and see our night shows two or three nights want to come downtown and see the other attractions.

As you all know, our night shows consist largely of fireworks. I don't think you can carry on a night show successfully without some portion of fireworks attractions. We have had them at Alta for four or five years. We tried at first to carry them on without putting any curtains around the fireworks show, but we have found that people who come up to pay at the gate in the day time would run their autos as close as they could and not go inside, and would in that way see as much as the people who paid to go inside. The first year we barely took in enough to defray expenses of the show. We went to the people and told them it was impossible to put on that night display unless they paid their money. The next year we put up an eight-foot canvas fence around the grand stand, and shut out the people who tried to take in the night show from their autos.

While our fair charges 50 cents at the gate, we give a passing-out check which protects the holder. The larger fairs cannot do that, but the smaller fairs it seems to me must do that. If we have eight or ten thousand people at the county fair in the day time, we are getting to the limit and we are getting all the people that are coming. So we have a pass check good up until 5 o'clock in the evening, and after five o'clock an evening ticket is sold for 25 cents with a coupon attached. When they buy that they have the coupon attached which is good at the grand stand. If people who attend in the day time want to go up town to get their supper or visit their neighbors or friends, they can do so, but when they come down in the evening they must pay 25 cents but that includes coupon to the grand stand, which is detached at the grand stand gate.

Since we have tried that method we have increased receipts at our night show over 300 per cent. Now, people of course hollered a great deal because we put up the canvas, but we told them it wasn't possible to carry on the fair without money, and we couldn't get the program unless we had this money to pay for it, and after one or two seasons of putting up this canvas the people were willing to pay.

My friend Mr. Mullen here, when he first put on his night show at Fonda, I asked him, "How are you going to work it?" and he said, "We are going to drive them out after the afternoon show." He tried it and almost had a riot. They didn't want to go out and they didn't go out, and you can't drive them out. The next best thing is to clear your grandstand after the races, put up your canvas, and if your grandstand is not big enough and you have fireworks, they would rather sit in on the bleachers than in the grand stand, because if they get high up in the grand stand, with the roof on it they can't see a sky rocket go up. We can put up those bleachers, and then the only expense will be the renting of planks that we get from the lumber yard, and those bleachers alongside of the grandstand add a great deal to your income. As this gentleman said, the night show is the coming features of your fairs. I have tried it and I know people will come to it.

Another thing we do up there is this: We sell the season ticket for the entire fair and charge $1.75. We sell that season ticket before the fair, and you would be surprised at the number sold. We sell from five to six hundred season tickets each year. This ticket is good for one admission at the gate each day; it is good for one admission at the grand stand each night, and it sells for $1.75. If it happens to rain, nobody ever asks for a rebate or rainchecks, so that we are seven or eight hundred dollars to the good and have that much money to start with, while it is a great reduction to the people who buy.

Speaking about the matter of concessioners beating you through privilege tickets. I would suggest that you offer them a card that is to be punched one, two, three or four times, or simply have a coupon ticket for each one of your concessioners so that that coupon is torn off for that day, and if they have to go out give them a passing-out check for their return. This pass-out return is all right for the average county fair. A man who pays 50 cents and wants to get out and back again without a check, and fails, is sore because he cannot come back. If he had a return check he will be satisfied.

EVENING SESSION

The Chairman: Now, gentlemen, we will come to order. The address of welcome was to have been given by the Hon. John MacVicar, mayor of Des Moines, but on account of his being out of the city, Mr. H. W. Byers, corporation counsel, has consented to extend to us the welcome from the city administration.

Mr. H. W. Byers: Mr. President and Members of the County and District Fair Managers:

It is to be regretted that our good mayor is not here tonight, but what is your loss in that respect and his, too, is my gain. It gives me an opportunity to meet you and spend a few minutes with you.

If I were going to give my notion of your business, or give you a new name, I would say that you are the advertising agency of what has now come to be recognized as the greatest industrial enterprise in the world, and that is the business of producing what men and women and soldiers must have to eat and wear. You know, I suppose, that it would be impossible just now, here or anywhere in the world, for that matter to have anything like even a moment's greeting in an address of welcome without some word or expression about the great contest that is on in the world, and out of that there has just come to me since I sat here this thought—that the greatest benefit that will come to this country, and to every person in it, and every community in it, out of this great world's war, will be the unifying and harmonizing of every element in American life. You know that once and for all, and now perhaps for the first time in the history of this country, we are going to be united, man for man, and every man that lives under the Stars and Stripes, no matter where he is or what his business may be, is going to stand four-square for Uncle Sam.

PATRIOTISM is the order of the day, and, if you will pardon me for just a moment at that, I want you to know that I believe (and I know you do) that the patriotism of the men of this country, whether they be interested in county or district fairs, or commercial affairs, whether they be interested in consumption or production, or whatever it may be, will be not measured by the contributions that may be made to the thousand-and-one things that we must keep up, and that we must give our money to, nor will the patriotism of the individual be measured by anything like lip service; but the patriotism of every man in this country now is going to be tested by his every-day conduct and his every-day activities in pushing forward and advancing every important interest of American business life and American social life. Because if we are going to win out in this fight, if we are going to get any certainty of compensation, men, for these thousands of splendid boys that we are giving up, many of us a great houseful of them—I say, if we are going to get any compensation out of the sacrifice of the boys and the money and the thousand-and-one other things that we are going to have to contribute to this contest, it must come in the way of a rebuilding and a solidifying of the American people into one grand forward-march for the best there is in the world.

Now, it is greatly to the interest of every man interested in farming in Iowa, and greatly to the interest every man interested in county and district fair management, as it is greatly to the interest of every man and woman in this capital city, to have the right kind of understanding with the people of the state of Iowa and the right sort of relation between the people—the farming interests, the business interests, the stock interests, and with the capital city of the state. It is wonderfully important that any sort of prejudice against the capital city, any sort of notion that there is any sentiment here is contrary or repugnant to or in opposition of the welfare of the best interests of the men and women of Iowa outside of the city. I say, it is important that that sort of thing be wiped out.

And so the people of the city of Des Moines are to be congratulated that you men are here once a year to hold your annual meeting, and they are to be congratulated because out of that gathering will come that understanding and that relation that must exist if we are going to go forward as one great, united force for the best thing in the state. And so I deem it an unusual distinction and pleasure to speak to you for a few moments this evening. My relation to the city is simply to do its legal work, but I say I deem it an unusual pleasure and distinction to have this opportunity to stand here before you as a representative of this city and to say these few words of greeting, and to have the opportunity to show to you that the best that we have here is open to you. We want you to know all about Des Moines. I tell you, men, it is today the most thrifty and livest and nearest up-to-date city, in my judgment, west of Chicago. We are growing, we are developing, we are trying here to get a clear grasp of the wonderful resources of the most wonderful state in all the Union, and you men, while there is of course always in connection with these associations and these meetings an element of pleasure, and an element of recreation and all that sort of thing, over and above all that, as I said in the beginning, you represent the advance guard of the greatest enterprise in the world. And as I said before, the world is coming to understand and to recognize the fact that out here in states like Iowa, where we have farms and soil and men and women and boys and girls that are big and clean and strong, we have a civilization in which we can produce not only everything that we need for our material comfort and happiness, but out of which we can produce the best and cleanest and strongest men and women produced anywhere. And so I say, we want you to know that the city itself is open to you and we welcome your association and all of you individually, and I only regret that our worthy, up-to-date and much-alive mayor was not here so that he could let you into some of the secrets that I myself do not quite know as yet. I thank you, men.

The Chairman: The next subject for discussion is entitled "Benefits of Annual Meetings" by L. H. Pickard of Harlan.

Mr. Lauer: Mr. Pickard was unable to be present, and I will read his paper here.

Brother Fair Secretaries and Fair Managers: When Secretary Lauer notified me that I had been assigned the above subject, I could not understand why he should call upon me to handle so important a subject. I finally decided that he did so for the same reason that the farmer put three dozen eggs under the setting hen—he said that he knew she couldn't cover them but he just wanted to see her spread herself.

The benefit of annual meetings all depends upon the individual. It is much the same as attending college: if one attends for the sole purpose of just having a good time and go out with the boys, he may not get much that would be of interest in making him a better fair secretary; but if his object is to learn what he can from those who possibly have had the benefit of greater opportunity and more years of experience, he surely can take home to his fair people many things that will be of value in conducting a fair. I have always contended that a man can usually find what he is looking for.

There is no question but our annual meetings are a great benefit to a fair secretary and fair manager. I have not missed an annual fair meeting or an Iowa State Fair meeting for over twenty-five years, and I never have attended an annual meeting that I did not learn something of importance to the fair interests. However, much as I regret it, I am obliged to miss the annual meeting this year on account of my wife's health. We are obliged to spend the winter in California.

I am sure if the secretaries who do not attend the annual meetings knew of the benefit they would receive they would never miss a single meeting.

I believe that I am willing to go on record favoring a law that would not allow a fair to draw the state appropriation who did not send a representative to the annual meetings. The state has a perfect right to demand this in return for their money. The prime object in the state's donation to the county and district fairs is for the purpose of improving not only the fairs of our state but also branches of industry as well.

I often compare fairs of our state to a graded school. Some you will find in the high school, while others are still in the kindergarten. We have compulsory education in our schools so why not in all that which is promoted by a well-balanced fair? A fair, to the animal kingdom, is the same as our colleges are to our boys and girls (possibly barring football). Did you ever realize that the breeders of registered stock would never get anywhere if it was not for the fairs and stock shows of our country? We have in Shelby county a greater number of breeders of registered stock than any other county in the United States.

Mr. Chas. A. Saunders of Shelby county had in Cumberland Type the greatest Shorthorn bull in the world. Why do I say this? Simply because he has been shown in the show ring thirty-six times, and won thirty-six grand championshps (was never defeated), and had it not been for the publicity he got at the fairs the world would have never known of this bull or his breeder, Mr. Saunders.

Charles Escher, Jr., also of Shelby county, is the largest breeder and importer of Angus cattle in the world. His publicity and success came largely through the fairs and stock shows of our country. Mr. Escher is president of the National Angus Association of America, and is also a member of the Iowa State Board of Agriculture. He is conceded to be one of the best judges of Angus cattle in the United States and his services as a judge take him to all parts of the world.

I simply mention these facts not for the purpose of advertising Shelby county, but to show you the great work and importance of the fairs of the county which has done so much for the great state of Iowa.

One can readily see the importance of a fair secretary and the duties he is called upon to perform, and he owes it to the state of Iowa to make himself as efficient as possible, consequently he should not only attend the annual meetings but take an active part as well. There should be no slackers among the fair secretaries of Iowa.

In closing I wish to say that Shelby county contributed to the Red Cross $635 in cash and also took a $1,000 Liberty Bond, and still has a good bank account. Gentlemen, I thank you.

The Secretary: The next topic is "How to Prevent Fairs From Being the Same Old Thing From Year to Year, and My Best Feature for 1917", by Mr. H. H. Rosebrook of Oskaloosa.

Mr. H. H. Rosebrook: Gentlemen of the Convention: I thought I was going to get out of the fair game this year and I guess Mr. Lauer thought the same thing, so he wanted me to bid you farewell and the best way to do it was to make a speech. But I haven't had time to give it much thought, having been engrossed with other things. In fact, I had forgotten about it, and when I was going by the Savery hotel I saw some members of the association and was reminded that I was to make a speech.

I don't take the position that I am able to dictate to the worthy secretaries of the different fairs of Iowa, because I am getting out of the game, and there is no reason why I should tell you how to run your fairs. But if you will take what I have to say with a grain of salt, and not swallow it in a lump, perhaps there will be no hard feelings.

If you get into a rut you will always be there until you get out, and you cannot get out unless you improve, and that is the way with fairs. Unless you improve your fair from year to year you will not grow; it will be the same old fair, you will lose in attendance and everything else.

The first thing to make your fairs better is satisfaction. The American people have to be satisfied, and of all things the fair is one of the greatest places for people to find fault that I know of, and the poor secretary has to take the blame. There are several ways in which you can give satisfaction. The first thing is as a patron approaches the gate, he should be well received by the gateman. If there is a gruff, short-speaking gate keeper, it puts a dark brown taste in the patron's mouth and he is not able to spit out all day. It takes all the joy out of life so far as the patron is concerned.

Second, your exhibits and your exhibitors. If there is any part of your exhibits, or any department that you can see was weak last year, put a special effort on that one exhibit or that one department. Keep a little closer touch or tab on the superintendent of that department and see that he brings that exhibit up to standard, because every exhibit brings in a proportion of the admissions at the gate. That is one of the principal things looked after at our fairs, is the exhibitor.

Third, the so-called "holdup". This has been a year of holdups. No doubt some of the fairs have taken advantage, like lots of other people, of the war and have charged exorbitant prices for everything. I noticed one of the things that was resented quickest and hurt our fair more than anything else that happened during our fair was one afternoon in our grand stand the report came to me that the peanut butchers were selling peanuts and ice cream cones and pop at ten cents. They had only been doinng it for an hour or so, but it created a regular storm and you could hear all over the grounds that it was being called a "holdup." I stopped it immediately and had it announced from the judge's stand that it was a misunderstanding and that we would not let it occur again. It had its effect. The same way with our lunch counters and with our dining hall. We saw to it that they furnished a meal that was satisfactory at a reasonable price. People went away feeling that they had got their money's worth; that they weren't held up, and I have yet to hear of the first disgruntled person being overcharged.

The fourth point is the police system and the parking of automobiles. Anything that will make a man disgruntled is to try to get his car out in the middle of the afternoon and find 150 or 200 cars backed up against it where he can't get it out. It is just as easy to systemize the parking of your cars as it is to run them in haphazard. We handled about 1,400 cars a day, and on the largest day we handled 1,600, but there wasn't a time during the day or night that any man couldn't go and get his car and take it out without disturbing any car around. It is just simply system. It wasn't any harder to handle them than a year ago, but we had a system and we followed it.

Another thing is your police system. If you have a policeman that tries to show his authority and tries to give people to understand that he is running the fair, he is going to cause dissatisfaction.

Another thing is the entertainment. Have your entertainment wholesome, and have entertainment for everybody. Don't let your fair run to horse races; don't let it run to amusements of other sorts; don't let it run to a strictly fat-stock show; but have something for everybody. If you find that your exhibits are going to be heavy on one end, get something on the other end to offset it, and have a fair for everybody.

I believe that we are not careful enough with our concessions. We look at the dollar too much instead of the class. I believe fairs are damaged more by the professional concessioner than by anything else that comes on the ground. They are out for anything to make a dollar or to make a diamond, and who pays for it but the fair? Every ten cents the people are robbed by illegitimate or unworthy concessioners comes right home to the fair, because the concessioner is gone and they have to blame somebody.

One of the most important parts of our coming fair is to be the educational features. It does me good to see the interest that is being taken in the different state departments and the government departments in agricultural fairs, for the purpose of aiding these institutions. Spelling contests, arithmetic contests, and getting the fairs to offer prizes that will be an inducement to participate. The foundation of the fairs of the future is being built today through the children and through the educational department.

The last part of my subject is my best feature for 1917. Mr. Lauer no doubt did not understand my attitude when he asked me to talk on that subject, because I don't believe in features. I think the farther away we get from the big day and the big feature idea, the more successful our fairs will be. You all know that in reference to country fairs that feature certain days. One neighbor will say to another, "What is the best day to attend the fair?" and the reply will be, "Better go Wednesday or Thursday." My theory is, men, to make Tuesday, and to make Friday equally interesting days, and if you do, Wednesday and Thursday will take care of themselves. But put your special programs, if you are going to have special programs, on the first and last days, for they will get your home people and Wednesday and Thursday will take care of themselves. That will equalize your fair more. If you don't take care of

Tuesday, and Wednesday and Thursday are rainy, you won't get your people out on Friday. That is the main talking point along the line of special features of the fair, and the only idea I have in a special feature at our fairs is specializing those two days—not specializing the days, but getting away from the old idea that there are to be two big and two small days at the fair.

Mr. Chairman: We will now have a talk entitled, "An Old Newcomer," by Mr. E. W. Williams of Manchester.

Mr. E. W. Williams: Mr. President and Brother Secretaries: Before going into this subject which has been assigned to me, I want to say that it has given me a great deal of pleasure to be a member of this organization. I have always been interested in amusements in more ways than one, and I am glad to be in this game at this time. I consider it not only a privilege but a duty as an American citizen to do everything I can to further the interests not only of my community and county and state, but of my country as a whole, in any way that I can lend assistance.

In traveling around visiting fairs last year, making twelve of them before and after our own fair dates, I was surprised to see the lack of patriotism manifested, and yet if there ever was a trying time in the history of man, it confronts us at this present time. We are up against the real thing, and I don't believe there is a man in any occupation or in any office that can do more for the betterment of the cause than the secretary of a fair. Many of the secretaries are below the age limit prescribed in the conscription act, and some will not be here to fill their dates. They will be doing more for their country than we are, and I therefore feel that we men who are left at home to enjoy our livelihood and our friends and our loved ones should increase our efforts to make this association everything that it should be. I don't blame, but commend, the men who are at the head of this organization when they urge upon us to be here and attend this meeting and the meeting of the agricultural society, and I believe and heartily agree that every secretary here today ought to take away with him the purpose of urging upon his directors that a representative of each fair in the state receiving state aid should be in attendance here. Every secretary is governed by his board of directors. Surely one of them can be sent to Des Moines to attend these gatherings. But I know what some men are up against for I have been connected with one of the rottenest fairs in the state of Iowa. We must clean out our directorate before we can hope to clean out our fairs and make them a success, and I believe the first move and the first thing to do is to put before the men the matter of patriotism. And if you have a director in your board who is not willing to come out flat-footed and say where he stands, he has no right to be on the board, nor has he a right to be a member of this or any other association; he is a detriment to it.

I want you to understand that I am not here to tell you what to do, for you are all older heads that I am, but I do believe, men, and I think you all have had experience enough when traveling from one fair to another to have noticed—a condition I am ashamed to admit—that practically the only bunting displayed or flags flying over our fairs are those put up by the concession men. I do not say that all fairs are that way, but a great many of them are indifferent on that score, and I tell you that with the trying conditions under which we have been working, it has been my observation that the concession men have been a darn sight more loyal than the directors. It has been said with reference to the fair that the more the war, the more the work for the secretary to do, the more that he works, the more that the ground will put forth; and yet the secretaries are putting forth more effort and getting less results than any other class of men living.

Take the matter of an old worn-out fair like we had in Delaware county, my home town. I don't want to go into statistics, but if you can picture in your minds a fine, prosperous county with a population of some 19,000, you will say that there is no excuse for not having a good county fair. If we haven't a good county fair in every county in the state, it's our own fault, for we ought to have one. I will give you a little history of what the fair was. For years the Delaware County Fair prospered in a mild way; for years there was a meeting place for the people of the county, a home-coming event, and that is all it was. Bill brought his largest pumpkin and Tom brought his tallest stalk of corn, and John brought his best heifer; and each year when I was a kid one certain gentleman brought his black horse that, I thought, had won more money than any other horse that ever ran. And so it went, year after year. The buildings had not been repaired for fifteen years; it was run-down-at-the-heel, and the whole thing was at the end of its string, both physically and morally. What was the excuse for it? Poor management. What caused the poor management? The secretary was a man who worked without salary. It was the same old thing, as in running for political office, the honor ceased the minute he got the badge of secretary.

During the last fifteen years, and up to the year 1914, there were just two men that made a success of that fair. One of them was Senator Hoyt, now our state treasurer. He put his heart and soul into it; he went out and visited farmers and put his money in it. He made the thing a success, but only after great effort. But the success was short-lived. And what was the cause? The board of directors. Simply because the board of directors was composed of men who were not educated to amusement of the productive world. And I say if you have a fair that is running down, and if you have a board of directors that cannot get together and talk things over in a business-like way, they are doing an injury to the state of Iowa and to the United States. It is up to us to pull things through with the help of organizations of this kind.

But going back to the old fair: They didn't make money enough to even keep up expenses, and towards the last few years the better class of men got tired of it. The business men had been asked to contribute in order to make ends meet, and they did; they deemed it a necessity and a matter of civic pride, and they were willing to go to the farthest limit to help, but even they became disgusted. What was the board of directors composed of? Men who were interested in agriculture, it is true, but they were mostly interested in the production of the land that they themselves owned. When the secretary called a meeting of the board, how many would be present? About two. And when some matter would be brought up for consideration by the secretary, Bill would say "What do you think about this, John?" and John would say thus and so, and Bill would say, "Yes, that's my idea," and that settled it. They didn't go out to visit other fairs; they didn't attend these meetings here in Des Moines; they didn't ask for or get other men's ideas; they didn't go into propositions thoroughly or investigate; they didn't study matters presented; and my remembrance is that when I asked Mr. Hoyt if they took a publication of any note, he replied that they might have taken the Horse Review, because Bill had the fast horse. They didn't advertise; they didn't study propositions, and they didn't do anything that business men should do and as a consequence the fair went down and down until in 1914 the business men were so disgusted that they quit. The fair was $5,000 in debt, amphitheatre was poorly and cheaply constructed and inadequate, the track was a track in name only, for the weeds had grown over it and had so obstructed the space that three horses couldn't run abreast, and the other buildings were in equally bad shape.

The last year that the fair was run the management paid enough for one act alone to have put on a good, well-balanced program. They didn't know anything about the game, and that was one of their greatest faults. My own inclination is for free acts and amusement, and under amusements I class bands, ball games, and free acts of all kinds. I believe in selecting novelties that the fellow twelve miles away from you hasn't got. These men would get together and put on the same old stuff time and again, until the business men in 1914 threw up their hands and said, "Let it die. If a bunch of men have hold of it and won't let go, we'll just give it up." It wasn't because they were not interested, it was because they were not posted that the management made such a failure of it.

If you are a doctor or a lawyer and you are going to take a vacation for thirty or sixty days, the thing farthest from your mind is to go out and get a substitute who is not educated in your line of work. And the same applies to fair work. When you choose a secretary for your fair, you get a man that knows the business and takes an interest in it. Today I think a man's duty first is to be patriotic, and the fair secretary as well as the board of directors must be patriotic; the next thing is, if you have men on your board of directors that are small and cannot see beyond the end of their nose, you cannot run a fair. That's all there is to it.

In 1915 the business men got together, under the leadership of the Commercial Club, and began to talk fair. I say that the greatest thing in any community or any city is a live commercial club. It has got anything else you can think of backed off the map. And in running a fair you have got to have men who take an interest in and work for it. We had a commercial club which was organized in 1910, and they wanted to take hold of the fair that year. They came to me and asked me if I would act as secretary, and I was foolish enough to get into it. I had been interested in amusements all of my life and when they organized the Commercial Club they asked me to take hold of the Amusement Committee, and that included the procuring of circuses and such other entertainments. Prior to that time we hadn't had a circus in town for years, but I got busy and brought the Hagenbeck-Wallace show to town, and I got some other good shows, and they proved a wonderful thing for the town.

Another thing, if you don't have a good band of your own in town, or in the country, make it an inducement to the farmers to organize a band which can be used at various entertainments; get a circus one month and a chautauqua the next month, but give the people entertainment. I believe that you can't give them too much. Make out all these programs so that it furthers the interest of your fair and advertises it. I believe that the circus furthered the interest of the people of Delaware county in our fair.

And in this method of entertainment, I wanted to instill into the minds of the newspaper men and the people generally that we were trying to get our fair back on the map, but if I went to some of our little towns around and asked for space in the paper, the first question asked was, "Who's going to pay for it?" The old fair had so broken down public confidence that the first year I couldn't get a free act and I couldn't get a band anywhere.

The business men wanted to take hold of the fair in 1915, and when they came to me I said: "Gentlemen, I think the best thing is to bury it deep and give it all the flowers and water than you can." But in 1916 they decided that they would put on a fair and called for the directors. They had some time in getting the old committee together and getting things started. When they went into the matter they found one of the biggest detriments to be the fact that there were 125 life-membership tickets and fifty 25-year membership tickets out, which had been given out by the old management. I won't attempt to give the number of five and ten-year tickets, but there was a proportionate number of them. If any one can tell me how a fair or theatrical business can exist on that kind of paper, I want to hear something about it. If we talked about rejuvenating the old fair, some of the older heads would get busy in order to protect their tickets.

The last year the old company operated I stood at the gate, and, gentlemen, these passes you have talked about aren't in it with a 25-year or a life-membership ticket. That's a fact. If you have a number of 25-year or life-membership tickets outstanding in your association, you have a piece of crape hanging around your neck right now. I stood at the gate in the year 1914 and looked after that matter. I had experimented in the amusement business, and let me tell you if you have an amusement business you are going to get skinned. I stood at the gate and I counted one rig in particular, old Dobbin and the surrey, containing the holder of a life-membership ticket, a young man driver and some women folks. Understand, I had nothing to do with the fair other than being an interested spectator at the gate. We were trying to further some plans for the fair at that time and I was there to get data for the use of the business men. Then came that life-membership pass, held by a nice old man, and in the rig drawn by a poor old black horse was seven passengers. The man at the gate courteously inspected the pass and let the rig and passengers in. The rig drove out after a bit and in about twenty minutes returned with the driver and six girls in it! Well, to make a long story short, twenty-one persons went in on that life membership ticket that afternoon.

You may talk all you please about the passes issued to concession men, but if you come right down to bed-rock you will find that the people in your own town give you more dirty work than the concession people. I am not here to deride anybody or stick up for anybody, but I am telling you what we had to contend with, and I believe that is what you want. Take the concession people today, and there is not a fair in the state of Iowa that can cut them out and come out on top. I mean everything that goes in the concession line, and there is not a fair in the state of Iowa, figuratively speaking, understand, that can cut them out and show figures on the good side of the ledger. The concession is an asset to the fair, and if you treat them right and show them that you have a real fair, they will do you a lot of good. The concession men, the free-act people, and the race horse people will do more for you today outside of your own boosters than any other people. They come to get,and I will admit they don't always get it honestly, but if you treat them square they will do the same, for I believe there is good in every man.

But returning to the fair. Mr. Hoyt was elected to take charge of the old fair association's matters, and he tried in every way to arrange a meeting where we might congenially work things out, but there was nothing doing. It wasn't for the good of the country or of the state of Iowa, or for the good of their sons and daughters that they fought, but for that almighty pass, and we had some hot meetings. It was the Manchester Commercial Club that backed us up and we all stuck together, and when the old crowd wouldn't be reasonable we just decided to let the dead remain buried, and so we simply said, "Gentlemen, we believe it is time to show you up; we believe we have got the products; we have got the men; we have got the population and we have got a railroad center, and everything else, and we're going to put on a fair." We had a fight, but we got started and the balloon strings were cut on the first day of the fair. When the old-timers came along and tried to get through on the old paper, we won out nicely, not by harsh treatment, but simply by showing them how it would be impossible to maintain a fair without money, and we won through courteous treatment.

So we got our directors elected and started to do business, but we couldn't put on a stock show the first year. I will show you what we were up against and what we put on by honest dealing. I believe that one of the greatest faults of fair managements is dishonesty—they misrepresent what they are going to put on at the show; they misrepresent what is going onto the grounds, and what is the result? When the public finds you have misrepresented, you are the first fellow that catches the blame. If we were to go down to the theatre tonight because of some certain advertisement which attracted your attention, and after you had paid your money you find that it was not at all what was represented, you would be the first man to holler. And so it is with the patron at the fair. It is nothing but the American idea of fair play, and so I say that I believe that the first thing every fair secretary today should do is to say that he is going to advertise anything that he cannot produce, if it lies in his power to do so. We all admit that sometimes acts cannot appear, for one reason or another, but I believe that every fair secretary will get along better if he will produce everything that he has advertised. And if you set your price at 50 cents at the gate, do not raise it, or don't put it at 35 cents for Thursday and Friday and then raise it to 50 cents. Let there be one price and let that price stand throughout the fair.

After we got going in 1916 we put on a carnival. I didn't have time to go out and get people, but we got a noted speaker and we got along very nicely, and we came out on top, and with the exception of the year that Mr. Hoyt put his shoulder to it and worked his head off, this is the first time that we had split even in a long time. We didn't have any animal exhibition because we didn't have any buildings. But after the close of our 1916 fair we were able to pay three years' back interest on the main indebtedness; we had cleaned up the grounds and paid our expenses for that one year. With such results we were winning back the confidence of the people, and we ourselves were much encouraged. We had the confidence of the farmer because we did just what we had agreed to do.

Before the fair we went to the livery barns and the stores and the hotels, and to the farmers themselves, and asked them not to raise their rates to the people coming in to the fair, and they didn't increase their rates. I did the best I could with our little funds that first year in advertising, and we tried it out by not using the county papers, but in my estimation it was a failure.

In 1917 they turned it over to me and said to use my own judgment. One thing I wanted to try out, and which I think proved to be a good thing, was this: Under the conditions we had previously worked, because of the lack of funds, the farmers hadn't been paid premiums and the bands had gone without their money. When we started out anew the first thing that our board of directors heard when they got together was this: "There's no use trying to work without funds, and I need money," so the board authorized the expenditure of $9,000 in buildings and betterments. There wasn't a building on the grounds that wasn't moved or torn down completely, or fixed up; there wasn't a fence post on the ground that wasn't in need of resetting or paint, and so we painted and repaired, and in addition we widened the race track.

Another thing: I believe that you cannot expect men of the free-act to do themselves justice without proper facilities. If you will stop and consider the free acts that you see in the summer time in parks and outdoor pavilions, I think you will find that they are the same acts that you go to the theatre and pay 50 cents or 75 cents to see. In the theatre they have the orchestra and the scenery, and that makes their act more effective, while we put them out in the open air without any scenery behind them, and half the time the music is very poor, and we expect them to do you justice. Nine times out of ten it is not as good as you saw it before, and you kick; but the truth is that as we compel them to produce it, the act is the hardest thing in the world to present with justice to the company and to you. I am speaking of my own county now when I say that I do not believe that we could put on a stock show and get by with it. We have got to get the music and the free-act and other features to entertain our patrons. We are situated between two large cities, Waterloo on the west and Dubuque on the east, and it is not difficult to get good free acts, so we went to work and built a good free-act platform. It is raised from the ground, with eight dressing rooms below ground is cemented. and in the rear there is a toilet. We have the bandstand next to the free-act platform. I don't believe that a band across the track can do the work of playing for the free-acts in justice to themselves or the performers. We have an amphitheatre 220 feet long, with a front rail six feet high instead of two feet. There wasn't an inch but what was gone over. Some of the farmers doubted the idea that we could ever bring back the stock show, but we did. I went down with men of the city and picked up two farmers and talked things over; then we went out and visited every stock raiser that is registered in the county, and went after them just as hard as we could. What was the result? We had as good an exhibit as one would want. We built new buildings. That has been done because we have the confidence of the people back of us. As long as I am secretary I will not try to talk what I cannot produce. If you treat your people white, I believe the fair will succeed, and I believe we can do the business, and my motto this year is simply PATRIOTISM and PRODUCTIVENESS.

The Chairman: The next matter on the program is a paper entitled "Publicity and How I Handle It," by Mr. E. S. Estel of Waterloo.

MR. E. S. ESTEL: Mr. President and Members of the Fair Association: In sitting here at this late hour and watching the interest that you men have in this discussion, I cannot help but call your attention to a meeting I attended just a few night ago. The mercury was down around 16 below. Of course, we fellows are all interested in the dairy game in Iowa, and I had a man along with me who was very much interested and was very anxious to talk. We went out to a little school house in a small town where we were to hold a meeting. We waited around quite a while for the people, but no audience came to listen to us, only one man. I thought the best thing to do was to give up the meeting entirely, but the other man, as all of these older fellows want to do, was very anxious to talk, so he started out to talk about the dairy cow and the very great advantages of her, and went on for an hour and a half, hard and long, and then I came on with my talk for three-quarters of an hour (don't worry, I ain't going to give that tonight), and after we got all through, as we usually handle these meetings, we say: "Are there any questions you wish to ask us?" and the man there said: "Yes, there is just one thing I would like to know, when will you get through? If you are through, I want to know it, because I am the janitor here of this school house and I want to lock up for the night."

When I told Mr. Lauer I would come down here and say a few words about publicity, I didn't know that Mr. Corey was going to be here, or Mr. Cameron, or Mr. Whitted, of the State Fair Association, for if I had known that I believe I would have declined.

It might be well to give just a little history of the show I am connected with. It is a little bit different from the fair business; it is a dairy show, exclusively a show for dairy cattle, dairy products, and dairy machinery and supplies. It originated about eight years ago on pure air. Some fellows got together and thought they would like to offer the breeders of dairy cattle of the west an opportunity to congregate in this state; they also thought they would like to offer to the manufacturers of dairy equipment an opportunity to exhibit their goods and thereby build up the dairy industry of Iowa. They organized their proposition and offered about $4,000 in premiums the first year. It happened that the Lord was with them and they came out all right. The second year there was a big show organized at Milwaukee; they chose the same dates that we had, and we went in pretty heavy and offered about $10,000 in premiums. The Lord wasn't quite so favorable that year and we ran behind $7,500. Since that time, although we have had six shows, and four times out of the six of them were rainy, we have come out quite well.

In talking of the publicity end of the dairy show in particular, I want to say that it is different from the county and district fair in that we try to advertise as widely as possible all over the United States, and we are limited in the funds we have to work with. The publicity end, as I see it, in fair work is one of the most important parts of the fair. It is important because it brings the attendance, and it is important because it brings our exhibitors. I want just to divide this subject into three different parts. I will take only just a very few moments.

The first is publicity before the show, and I might say that we have already started the publicity for our 1918 show. We have sent out the announcement of the dates of the show to all of the agricultural papers in the United States, and we are going to keep on sending out little articles in regard to the 1918 show from now until the opening of that show. We have found every newspaper that we approached anxious and willing to get behind a movement that is worthy, a movement that will develop the agricultural features of our county, because of the fact that they know the farmers are the real men in this old state of ours, and they know if they cater to the wants of the farmer and foster his development, why, it means progress to them. So we have found the newspapers and the agricultural papers very willing to help us, and in advertising the dairy cattle congress we have sent out news items right along to our newspapers. We have found that in some instances the item didn't take very well, while in others, especially if they had a very catchy heading to them, they were very successful. I remember one heading that went all over the state and outside of the state, which read: "Baccilli will be in large numbers at the dairy show," and that item with that heading was run all over the country and gave us more publicity than any other article we had. And that article just referred to the germs that would be in some of the samples of milk that we expected to have to show the public what poor and good milk was.

We have used news items and we have used plate material, and handled both through the newspaper press and the Western Newspaper Union. We have found that the plate material, in order to secure the best results, ought to be accompanied by a great many picture cuts; and if any of you gentlemen use the plate material, I would suggest that right on the picture itself you put the name of your fair, the dates of your fair, and the place it is to be held, and use that as part of the cut rather than to let the subject of the cut go in the printed matter only, because in many instances where this is used they will cut off the heading and the picture will be there, but the name of the fair dates or the place of the fair will not appear.

We have also found that it is good business to use an advertisement in a paper about thirty days before the show starts. That is simply to show the newspapers that we are not asking too much of them;that we are willing to pay them for a part of the work, and we have found after we have sent the ad out to the newspapers about thirty days before the show opens that they are more willing to print the news items that are sent later, and I believe that is a very good idea to send out an advertisement about thirty days ahead of the show.

We have divided up our advertising in newspapers, in agricultural papers, on bill-boards and road-signs, and every one of those have given us good service. I believe I would class them for the dairy show, as follows:

1. The agricultural papers,
2. The newspapers,
3. The bill-boards,
4. The road-signs.

By road-signs I mean all the road-signs you men use; the automobile banners, the pennants, and all those things. We have found this, in the case of bill-board advertising: I have noticed it and I have a notion to tell Mr. Corey about it. If we use 8-sheet posters, we usually get an awfully poor place for them. I have seen State Fair advertising that Mr. Corey had sent to men that he thought would place them in good positions, out in the alley. I have seen other fair advertising in out of the way places, and simply because it must have been 8-sheets and they simply placed it any old place. But in sending out these billboard posters, we have found that the 24-sheet stands get much better places. They can't stick them off behind the other bills, and 24-sheets have given us much better service in fewer numbers than a large number of 8-sheets, and we have consequently used that class of bill-board advertising. We have also used the depots in the railroad stations. We have found that every one of the agents of the railroads are more than anxious to help us in advertising our shows, and we have sent them attractive posters, which they have placed for us without charge.

With regard to the cost of this advertising to us in relation to our gate receipts, I might say that our advertising during the past year (and I am not in a position to know how it compares with fair advertising, because I don't know very much about handling fairs, so I don't know whether this is high or low), but it has been 10 per cent of our gate receipts—the cost of our advertising during the past year—and it has been 6 per cent of the total receipts of the entire fair or show. I am not prepared to say, because I don't know enough about it, whether that is the right proportion in your business, or not.

Now, publicity during the show. We didn't know how to handle a show when we started and we are learning all the time, of course, but we found out during the past two years that it is very good business to send out articles every day. Sometimes we have gone to the expense of having those sent by wire to the leading papers in the state. We did that for the purpose of trying to keep up the interest in the fair, or in the show, and we tell of the awards on the cattle that were given on the day before; we mention the free-acts that we had, and other things of interest; we give the program and the contests, and give the names of those winning the contests, and we find that a very good means of keeping up the interest in the show.

Now, there is another matter that has been mentioned here by other speakers very much better than I can discuss it in the portion of time that I have; but I want to say that I believe one of the best ways of advertising is to treat the exhibitors absolutely right. You know, I went up to Brother Barber's fair at Mason City and I noticed that the exhibitors were well pleased. Later a few of those exhibitors of dairy cattle came to our show, and I want to say to you that every one of those exhibitors that attended the Mason City fair were publicity agents that Mr. Barber couldn't have gotten in any other way. And do you know the reason they are boosters? Because the secretary of that fair—I mention this because it applied to the county or the district fair, it couldn't be applied to the larger fairs—but the secretary of that fair went through the barns every day and talked with them and asked them if they were satisfied, and all that, and do you know that helped the Mason City fair a great deal?

And then in regard to the concessioners and the free-acts. I remember just before the show opened there was a free-act man that came to the office and wanted to know if any of our acts wouldn't appear. He had just come from Waverly and he remarked about the treatment that he had gotten at Waverly, and do you know that fellow couldn't say enough for the Waverly fair? And for that reason I say if we treat our exhibitors right; if we can get time to go out and see them and visit with them, ask them if things are coming along all right that helps a fellow a great deal.

Another thing that was mentioned here tonight, and which might be of interest to you, is that we have a feed dealer in Waterloo that handles the feed problem for us. We tried to handle it ourselves, but we found it cost us more to deliver and handle the feed than it did for one man to handle it alone, so that we make arrangements each year for the leading feed dealer at Waterloo to handle the feed for us, and that man has a tent at the ground and he has all kinds of feed and takes orders and delivers without delay. We compel him to publish prices of all the feeds that he has, and those lists of feed prices are tacked on the doors in the cattle barns so that every exhibitor knows he is being treated just the same as other men. We don't get any commission on the feed sold, at all, and we have found that to be a mighty good way of having the men go away from the dairy cattle congress well satisfied, and acting as advertising agents for us.

There is one other thing to encourage the exhibitors. We have given prizes to those who keep their cattle and who keep the barn in the best shape. We award those prizes on the cleanliness of the herd, the courtesy of those showing the cattle, the courtesy of those leading out the cattle for inspection when requested, and we offer fifteen gold medals and as a sweepstakes prize we give a watch. It is a small matter, but it keeps those men advertising the fair for us.

The third division is publicity after the fair. We have always found that it is a good plan to have a photographer on the ground all the time. It costs money, but if we can get snapshots of anything that is on the ground of particular interest, of the exhibits, or cattle, or the exhibits themselves, and if we can supply those to the papers after the show, it pays. For instance, during the past year we by this system secured in in six agricultural papers three full pages of written material, with pictures on the show days; we secured in eight agricultural papers two pages of written material and pictures; we secured in thirteen papers one-half pages of material about the show, and we secured in thirty-two papers one or more columns of advertising that will help us in the next show. Those are just a few things I have gathered together.

I don't know as I have covered the subject which was assigned to me thoroughly, but there is just one thing I want to call your attention to, if you will pardon me for just a moment. We had a very sad accident happen at the dairy cattle congress on the Sunday before our show opened, and it set us to thinking. I was asleep, as the manager of the show, I will admit, and I thought possibly that it might help some of you men who are here. There was a wagon leaving our grounds—very heavily loaded, high wagon, and it happened to pull down the sign that we had hanging over our gate. We were doing all in our power to safeguard the public, but I guess the wind came soon after that, when it was broken from its fastenings, and it fell down and killed a little boy. And while the dairy cattle congress was doing all things in its power in trying to safeguard the public, and our guards even carried the boy back to keep him away from the gate, yet we are now sued for a large sum. We are endeavoring to settle that case as best we can, but liability insurance I believe is what we should have had. I thought possibly a word along this line, because we have had this accident, might remind you men of the thing that you ought to have. We are going to carry liability insurance next year. I have the figures on it, and, gentlemen, it costs only a dollar for every $100 of gate receipts, and I believe that it is an investment that is good and sound, and I thought I would just leave that word with you in order that you might safeguard your fair by carrying insurance.

The Chairman: Gentlemen, it gives me great pleasure to introduce to you this afternoon Hon. W. L. Harding, governor of the greatest state in the Union.

Mr. Chairman and Gentlemen: As I recall it, I spoke to practically this same crowd yesterday. I don't know what the chairman has against you that he should inflict me upon you again. It is a pleasure, of course, to meet with this organization. You are men who are willing to take a chance, and I suppose that is the reason you come in spite of the program. Running a fair, working a year for a week's entertainment, going up against the weather, as you have to, and smiling even though it is against you; going down in your pocket to make up the deficit, if you have to, surely ought to make brave men of you.

The state and county fairs, of course, are educational institutions. I think as yet our people do not thoroughly understand that, but they will learn to understand it, and the better they understand it the more interest is going to be taken in the fair and the more money you are going to receive as support from the state. I am a thorough believer in the home organization of the county fair, or district fair, which ever you are pleased to call it. My experience in state work so far has demonstrated to my mind that it does not pay to concentrate all of your energies in a state organization. The state organization is necessary, is vitally important if you expect to make out of these entertainments what they really ought to be for the state. In other words, we are coming to a place in this country where we have got to go to the people with these things, rather than expect the people to go very far to these institutions.

I have the same feature in mind with reference to education. I believe that the extension work of the Agricultural College accomplishes far more than we realize. That work which we take out to the public—and I want to see the time come when more of it is done. I think we ought to send the professor to the people rather than asking the few to go to the professor. Of course, we could not lay any charge against the Dean, because he goes, and it is right that he should. The message should be carried out to the people where they live, through the medium of the school, and it is surprising how much can be accomplished in a very short time in a community by a short course where the people are themselves interested.

Now, I am not going to take your time this afternoon to talk along that line to you, because there isn't anything I can tell you that you don't already know. The most I can do is to encourage you in the work you are doing and commend you for it. I know when you have gone through a campaign to get a fair started, get the people interested, and pull it off, you are pretty tired, and then when you look back over it you will probably say: "That represents a lot of hard work, and I wonder whether the people appreciate it?" and in addition to your other troubles the exchequer is probably pretty thin. But you get together at one of these meetings and talk things over, become enthusiastic over the possibilities of success and start again at another, and the best encouragement I can give you today is that you should go back and make the next year better than the past one.

The opportunities here in Iowa are unlimited. We have only just touched the surface—the mine is there ready to be opened up, and it will produce. Some of you men have spent your life, almost, in this line of work. If you go into communities where they don't have fairs, you will soon find what a fair means to the community. It is hard to judge the value of a fair in a community where you always live, but you go to some other community where they haven't a fair and by comparison you can tell what it does.

I am sure that the state is more and more going to aid these county fairs and district fairs than they have in the past. It is up to you men to create the sentiment. I have for some time (I don't know but I mentioned it some three or four years ago to this organization) believe that something ought to be done toward making a permanent record in the form of moving pictures of these entertainments and then using them during the dull season as advertisements and as education. I know that the fair is a stimulant to the producer of livestock, for I have been about the judging pens when they were giving the ribbons, and the pride that a man has in his herd—and a just pride it is—is very evident at such a time. So I say the fair is a stimulant, and we need that in this state.

Nature has been very kind to us in Iowa, though we haven't accomplished as much as we ought to have accomplished. We have overcome that situation. I know a fellow who went out to California or Washington and bought land to grow apples on, and he paid $500 an acre for it, and he sold just as good land right here in Iowa for $40 an acre. Some years ago, this was. Went out there and paid $500 an acre for it to grow apples, and all they furnished him was a valley and sunshine, and he had to furnish the water and the soil. But here in Iowa we have the sunshine, the water, and the soil, and it is so easy that there has to be some sort of stimulant to get the people to actually produce as they can produce in this state. State pride is a vitally important thing, and we need to cultivate that.

So the thought that I want to leave with you is, go back, even though there is discouragements, as there are, go back to your community, make up your mind that you are going to make your fair the best that it has ever been—better than it has ever been before, and make it the best in the state. And I find that is true among secretaries. I most always visit the secretary when I visit the fair, and I find that he says: "Have you ever found a better fair in Iowa than ours?" and I have to tell him that I have not. I have never quarreled with the fellow whether his fair was better than others, but that spirit should prevail. It is the right spirit. Unless a man has pride in the thing he is doing, he has lost the incentive to do. I saw one secretary where he had a building about 10x12 and a couple of cans of fruit and a hen and a duck in it and he took me in there with as much pride as a man could and he said: "We have just started but we think it is fine." It was. They had made the start but that was the spirit that was necessary. If he had gone to apologizing to me he would have been apologizing to the public.

I don't know anything about fairs except that I like to go to them and like to get a pass, but if I don't get a pass I will pay my way in. I understand that this pass costs somebody money, but I do know from my contact with the public, and my contact with communities where they do have no fairs, that they are an educational institution, that they are worth while, that they should be encouraged, and that there should be more of them and better ones, and that the state doesn't make any mistake when it puts money into this kind of educational institution.

I want to congratulate you men on the fact that you are organized in such a way that you can go out and create sentiment along the line of the interest that you represent.

I thank you.

The Chairman: The next on the program is an address by J. F. Deems of Burlington, Iowa, on "County Fairs' Part in Food Conservation." Mr. Deems was unable to be here, as has been announced heretofore, so we will pass onto the next subject, which is an address by Dr. J. I. Gibson of Des Moines, state veterinarian, entitled "Live Stock Sanitation at County Fairs." Here is a letter addressed to Mr. J. Q. Lauer from Dr. Gibson, which I will read:

> "I received notice this morning of the death of my uncle Frank Gibson, at Denison, Iowa, and will leave Wednesday morning to attend the funeral.
>
> I fear I will not be able to get back in time for your banquet Thursday noon, as I had hoped to be present and talk to you about Live Stock Sanitation in connection with State, District and County Fairs.
>
> "I believe it is of the greatest importance that there be careful sanitary supervision of the barns, stalls and pens at all fairs and that the cattle exhibited be healthy and free from tuberculosis as shown by the tuberculin test, also that the hogs be healthy and that they be immunized against cholera. It is also of the greatest importance that all live stock be examined on entering a fair ground to see that no evidence of contagious or communicable disease such as influenza or shipping fever in horses, cholera in hogs, and the various skin diseases affecting all the species.
>
> "In regard to carrying out this work properly there should be a competent veterinarian in attendance to examine all live stock before being passed to barns, stalls and pens. These requirements should apply to such animals as are shown at fairs and sold to be delivered on new premises after the fair.
>
> "I regret exceedingly that I cannot be present to talk to you on this subject."

The Chairman: Now then, we have been promised and will be grateful for a talk by Dean Curtiss of Ames on a subject that he will himself select. Mr. Curtiss.

Mr. C. F. Curtiss: Mr. Toastmaster and Gentlemen: Your toastmaster didn't give me any subject and I don't know what the subject is, but I want to say that I have great admiration and respect for the county and district fair managers. They are live, wide-awake, progressive bunch, and they are doing a great work. I am heartily in favor of the strongest and biggest state fair that we can have in every state, but I am just as much in favor of the right kind of district and county and local fairs in every community. I believe that they serve just as important a place as the larger fair, and that the one supplements the other.

One of the gratifying features of the situation in this state is the harmony and teamwork that prevails upon the part of all of the fair managers. I think that one of the best features that comes out of these annual meetings is the coming together of the fair men that attend these meetings. I am glad that you are considering ways and means by which a larger representation can be brought here from year to year, and hope that every fair management in the state will be represented here.

I don't think there has ever been a time in this or any other country where the county and local fairs were as important a factor in the communities they serve as they are today. Instead of letting up on the fair program, or postponing them as has run through the minds of some at the beginning, the fairs have demonstrated their place and they have demonstrated they are a most important factor in protecting the interests of the country in this great crisis. And my prediction is that next year you will have greater support than ever before.

I think you ought to go home and prepare for an intensive program of the best methods that the fair can bring out in aiding production. This country is face to face with a great crisis. The greatest in the history of the nation, and we are proud of the young men that are going into the army and into the navy. Next spring we will have a million men over in Europe in uniform, and we know as we see those young men going out from the various communities, and as we see them going into the camps, there is no question as to what they will do when they get "over there," and there is no question of whether they will be true, or not. The great big problem we are going to have to face in this country is what we are going to do to support and fit those armies and furnish them munitions in order to make their work most effective, and if we don't do that, we had a thousand times better never send them there. This country is just now coming to the real test on the part of the people that are at home.

This past year emphasis was not made on the communities and upon the matter of production as it will be in the year to come, and the real test is coming upon the country this coming season. We talk about increasing production, and I hope we may, but I am very much afraid unless we have more than normal conditions, more favorable conditions than normal, that we will have a very hard task to maintain production on both crops and livestock, and especially on livestock. There will be such a shortage of labor on the farms that the tendency will be to reduce the labor of growing livestock to a minimum and to apply the energy upon the fields, and unless a strong effort is put forth there will be a great many acres of land in this state and every other state very poorly cultivated, if it is cultivated at all, and there will be great difficulty in saving the crops. Therefore our part is to do at home the part that devolves upon us, while the young men who are wearing the uniform are bearing their difficulties on the firing line.

I picked up a magazine in an Indian school a few weeks ago, and on the first page of the magazine were the words, "The Government expects every Indian to do his duty." This is a slogan for us—The Governent expects every one of us to do his duty. And the man who fails to do his best is a slacker. The time will come when every able-bodied man will have to get into active service of some kind, and it will be a sacrifice on the part of some of us. Last summer I said something about the retired farmers getting back into service, and a friend of mine up in northwestern Iowa, himself a retired farmer, got the paper when he arrived downtown and showed it to some of his friends on the street, and he said: "See here, you have all got to go back and get to work; see what Curtiss says?" And then some of them looked at the paper and said: "Who is that Curtiss?" We have been inclined to take it in a light and jovial manner, but I don't believe we are going to be able to man the farms and maintain production unless we put forth the most strenuous effort that possibly can be made, and even then we will have great difficulty.

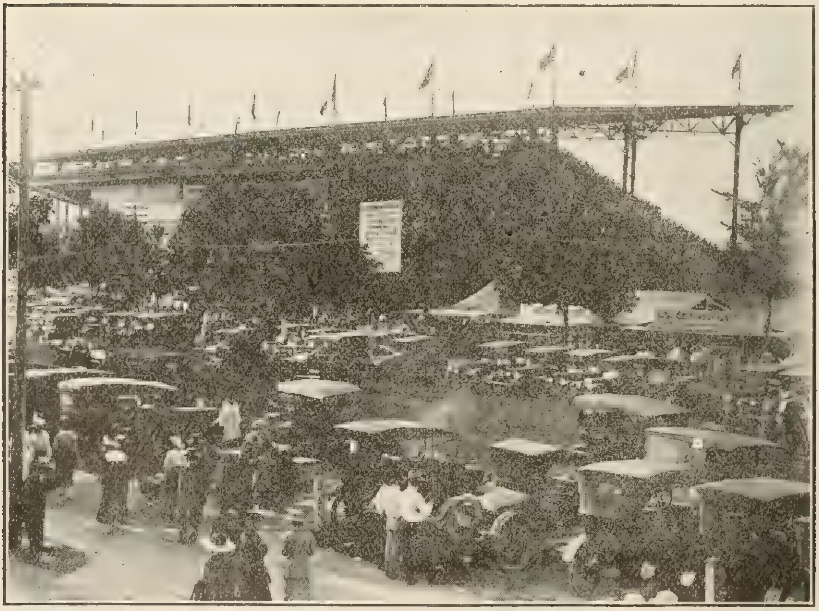
The fairs have an important part to do. I think that the fairs and the fair managers ought to cooperate with every organization in their community to help solve the problem of stimulating production and help maintain force upon the farms in order to furnish the food products that are needed and absolutely necessary. One of the marks of a progressive civilization is organized and cooperative work—team-work, and the fair is a good illustration of that. The community that has a live, progressive fair, that is well supported and backed by its people, is more able to do things than the community that has not. And that community profits by it immensely. It tends to increase the value of farm lands and the entire resources of that community, and there is no better illustration of the temper of the community than the manner in which it supports the fair.

I listened a few days ago to the rendering at a public meeting of that famous production, "A Man Without a Country," and I thought it was one of the most pathetic things I had ever heard, and in some way I couldn't help associating the fate of that man with that of the mayor of one of the great cities of this country—but not in this state, I am pleased to say. And then this pleasing contrast came to my mind of a mother with three sons of military age, and a friend of hers said: "Will you permit your sons to enlist in the army and risk their lives by going to France?" and this noble mother replied: "All that I have and all that my sons have belongs to this country, and God forbid that I should find it in my heart to keep them from meeting their obligations to this country in its time of need." It is that kind of support that gives this country a fine army, and while it formerly was said that this was a rich man's war, you don't hear that any more. The rich men's sons, in common with others, have met their responsibility and are going forward with us, and the thing to do, as President Wilson has said, is for every citizen of the United States to get into line and stay there till the end. This is not a war of the army or the navy alone. We sometimes hear it said that this or that will win the war, and that the farm products will win the war, or even that the producer can win the war, or that industry can win it; but it is not going to be won by one of these things alone. It will be won only by all of them working together; it is teamwork on the part of the entire nation that will win this war. It is not my work any more than it is work that you are engaged in that will win. I am satisfied that as long as this war lasts, the work that is being done by this effective organization of district and county fairs will be an important factor.

The Chairman: The next will be the report of the Resolutions Committee, which we didn't have this morning.

Mr. H. S. Stanberry: Mr. Mullen is chairman of the Resolutions Committee, but being a good Indian I consented to be his secretary and wrote the resolutions, and he now says that he can't read my writing, so I will have to read the report myself.

> RESOLVED, That the Iowa Association of County and District Fair Managers, in convention assembled, tender our hearty thanks to the officers of this association for their untiring efforts in procuring legislation which has been so beneficial to our members, and other efficient service rendered by them.
>
> Realizing further the importance of cooperation and organization, we further
>
> RESOLVE and recommend that the legislative committee of this organization cooperate with the legislative committee of the State Board of Agriculture in procuring an amendment to our present laws pertaining to state aid to fair associations, making it a requirement that in order to procure such aid each fair association must have representation at the annual meeting of the State Agricultural Convention.
>
> BE IT FURTHER RESOLVED, That in this great conflict of war with other nations, that we pledge our allegiance to our Government and offer all our resources to the end of winning this great war against autocracy, and the ultimate victory for a united democracy of all nations.



Scene on Grand Avenue at the 1917 Iowa State Fair. The auto has brot independence of railroads to the Fair visitor.

PART IV

Livestock Awards and Press Reports of the 1917 Iowa State Fair and Exposition.

HORSE DEPARTMENT

SUPERINTENDENT....................................C. F. CURTISS, Ames

PERCHERONS.

Exhibitors: Chas. H. Babcock, Moville, Iowa; Geo. Baker, Newton, Iowa; J. Hill Barnes, Oskaloosa, Iowa; Don L. Berry, Indianola, Iowa; Wm. Bohlander, Altoona, Iowa; Casey Bros., Iowa City, Iowa; Fred Chandler, Chariton, Iowa; Crawford & Griffin, Newton, Iowa; B. H. Dennis, Killduff, Iowa; John Donhowe, Story City, Iowa; Dunhams, Wayne, Ill.; H. W. Gossard, Chicago, Ill.; J. M. Gross, Adel, Iowa; S. M. Hague, Earlham, Iowa; Wm. E. Hays, Lenox, Iowa; R. W. Hoit, Beacon, Iowa; F. A. Huddlestun, Webster City, Iowa; Hurdcroft Farm, Monticello, Minn.; Iowa State College, Ames, Iowa; J. T. Judge, Carroll, Iowa; Lennabarg & Stonebarger, Lone Tree, Iowa; W. A. Mark, DeSoto, Iowa; M. J. Nelson, Cambridge, Iowa; J. B. Sheehy, Jamaica, Iowa; J. O. Singmaster & Sons, Keota, Iowa; W. T. and U. I. Sinnard, Indianola, Iowa; Truman's Pioneer Stud Farm, Bushnell, Ill.; R. P. Wait, Reynolds, Ill.; Louis E. Wheeler, Sibley, Iowa.

JUDGE..................................A. L. ROBINSON, JR., Pekin, Ill.

Stallion Four Years Old or Over—1st, J. O. Singmaster & Son on Philix, 93488; 2d, Chas. H. Babcock on Ivan, 108146; 3d, Wm. Crownover on Jour, 78989; 4th and 5th, Truman's Pioneer Stud Farm, on Naif, 130826 (112786) and Narguile, 130832 (113939).

Stallion Over Three, Under Four—1st, J. O. Singmaster & Son, on Keota Jalap, 106186: 2d, Dunhams, on Dunham's Champion, 118330; 3d, J. O. Singmaster & Son, on Orie, 118283; 4th, J. O. Singmaster & Son, on Eugene, 118355; 5th, F. A. Huddlestun, on Medallion 113127.

Stallion Over Two, Under Three—1st, 7th and 8th, Dunhams, on Arago, 122656, Invincible, 122824, and Black Ben, 119401; 2d, 3d and 9th, J. O. Singmaster & Son, on Jock, 113436, Model, 121261, and Lagnon, 120920; 4th, Hurdcroft Farm, on Promoter, 122101; 5th, J. Hill Barnes, on Sultan, 125605; 6th, Don L. Berry, on Pompey, 121691; 10th, Chas. H. Babcock, on Jumbo, 125751.

Stallion Foal—1st, Geo. Baker, on Maltais,' Jr.; 2d, W. M. Bohlander, on Majorat.

Stallion Three Years or Over, Bred by Exhibitor—1st, J. O. Singmaster & Son, on Keota Jalap, 106186; 2d, Chas. H. Babcock, on Lehiner, 93532.

Stallion Under Three, Bred by Exhibitor—1st, J. T. Judge, on Sir Cyclone, 124301; 2d, J. O. Singmaster & Son, on Maple Grove Ledgerdemain, 131616; 3d, J. Hill Barnes, on Sultan, 125605; 4th, G. L. Berry, on Carot, 131095.

Yeld Mare Four Years or Over—1st, Dunhams, on Trinquante, 103335; 2d, Geo. Baker, on Nena, 105602.

Mare and Foal—1st, Iowa State College, on Ellen, 65954, and foal; 2d, J. T. Judge on Jarange, 79525 (87521), and foal; 3d, R. P. Wait, on Ique and foal; 4th, S. M. Hague, on Logan, 67548, and foal.

Filly Over Three, Under Four—1st, Hurdcroft Farm, on Pearl, 114847; 2d, Chas. H. Babcock, on Adalaide, 118885.

Filly Over Two, Under Three—1st, Dunhams, on Sylphide; 2d, Dunhams, on Kathleen, 122828; 3d, Chas. H. Babcock, on Libelle, 125177; 4th, Wm. Shultice, on Orpha, 122994.

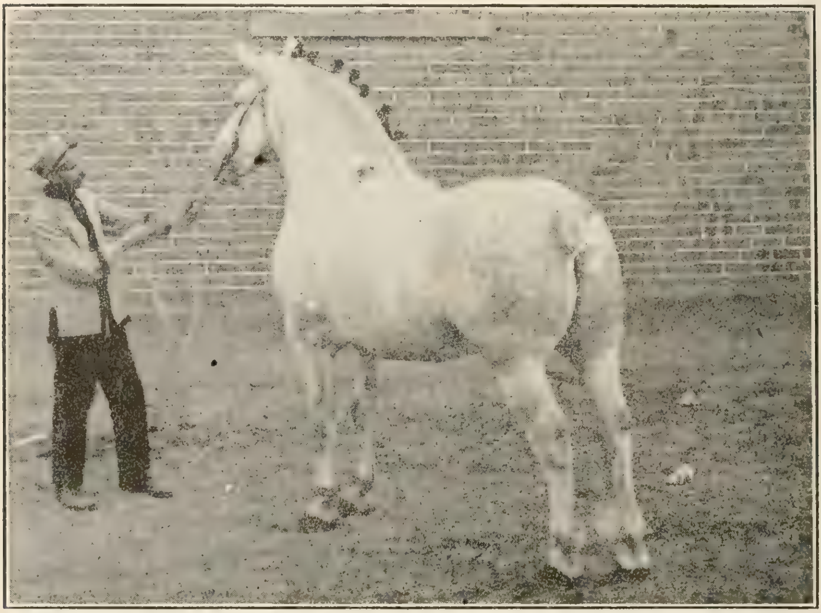
Mare Foal—1st, Iowa State College, on The Princess; 2d, J. T. Judge, on Jarnett; 3d, J. M. Gross, on Mabel; 4th, Chas. H. Babcock, on Iverne.

Mare Three Years or Over, Bred by Exhibitor—1st, Dunhams, on Trinquante, 103335; 2d, Geo. Baker, on Nena, 105602.

Mare Under Three, Bred by Exhibitor—1st, Hurdcroft Farm, on Sarah Belle, 131957; 2d, Dunhams, on Sylphide; 3d, R. P. Wait, on Ruth Lucile, 122571; 4th, Chas. H. Babcock, on Minnie, 125437.

Senior Champion Stallion—J. O. Singmaster & Son, on Philix, 93488; Reserve, J. O. Singmaster & Son, on Keota Jalap, 106186.

Junior Champion Stallion—Dunhams, on Arago. Reserve—J. T. Judge, on Sir Cyclone, 124301.



Reserve Grand Champion stallion at the 1917 Iowa State Fair. Owned by Singmaster & Sons, Keota.

Grand Champion Stallion—J. O. Singmaster & Son, on Philix, 93488. Reserve—J. O. Singmaster & Son, on Keota Jalap, 106186.

Senior Champion Mare—Dunhams, on Trinquante, 103335. Reserve—C. H. Babcock, on Majoret, 113499.

Junior Champion Mare—Hurdcroft Farm, on Sarah Bell, 131957. Reserve—Dunhams, on Sylphide.

Grand Champion Mare—Dunhams, on Trinquante, 103335. Reserve—Hurdcroft Farm, on Sarah Bell, 131957.

Champion Stallion Owned in Iowa—J. O. Singmaster & Son, on Philix, 93488. Reserve—J. O. Singmaster & Son on Keota Jalap, 106186.

Champion Mare Owned in Iowa—Geo. Baker, on Nena. Reserve—Chas. H. Babcock, on Adalaide, 118885.

Get of Sire—1st, R. P. Wait; 2d, John L. Berry; 3d, C. H. Babcock.

Produce of Mare—1st, John L. Berry; 2d, J. T. Judge; 3d, Dunhams; 4th, Geo. Baker.

Stallion and Four Mares—1st, Dunhams; 2d, C. H. Babcock.

Five Stallions Owned by Exhibitor—1st, J. O. Singmaster & Son; 2d, Dunhams.

SPECIAL PRIZES OFFERED BY THE PERCHERON SOCIETY OF AMERICA, ALL CLASSES BRED AND OWNED BY EXHIBITOR.

Stallion Three Years Old or Over—1st, J. O. Singmaster & Son, on Keota Jalap, 106186; 2d, Chas. H. Babcock, on Lehiner, 93532.

Stallion Under Three—1st, J. T. Judge, on Sir Cyclone, 124301; 2d, J. O. Singmaster & Son on Maple Grove Ledgerdemain, 131616; 3d, J. Hill Barnes, on Sultan, 125605.

Champion Stallion—J. O. Singmaster & Son, on Keota Jalap, 106186. Reserve—J. T. Judge, on Sir Cyclone, 124301.

Mare Three Years Old or Over—1st, Dunhams, on Trinquante, 103335; 2d, Geo. Baker, on Enena, 105602.

Mare Under Three—1st, Hurdcroft Farm, on Sarah Belle, 131957; 2d, Dunhams, on Sylphide; 3d, R. P. Wait, on Ruth Lucille.

Champion Mare—Dunhams, on Trinquante, 103335. Reserve—Hurdcroft Farm, on Sarah Belle, 131957.

Get of Stallion—1st, R. P. Wait; 2d, D. L. Berry; 3d, Chas. H. Babcock.

Produce of Mare—1st, D. L. Berry; 2d, J. T. Judge; 3d, Dunhams.

Champion Stud (Stallion and Four Mares)—Dunhams.

Five Stallions, Owned by Exhibitor—1st, J. O. Singmaster & Son; 2d, Dunhams; 3d, Truman's Pioneer Stud Farm.

Champion Stallion (Open Class)—J. O. Singmaster & Son, on Philix, 93488. Reserve—J. O. Singmaster & Son, on Keota Jalap, 106186.

Champion Mare (Open Class)—Dunhams, on Trinquante, 103335. Reserve—Hurdcroft Farm, on Sarah Belle, 131957.

Best Stable Decoration (Draft and Harness Horse Exhibit)—1st, O. J. Mooers; 2d, Dunhams; 3d, J. O. Singmaster & Son; 4th, Truman's Pioneer Stud Farm.

NATIONAL PERCHERON BREEDERS' FUTURITY.

Yearling Stallion—1st, J. T. Judge, on Sir Cyclone, 124301; 2d, J. O. Singmaster & Son, on Maple Grove Ledgerdemain, 131616; 3d, John Donhowe, on Anton D., 129235; 4th, 6th and 12th, D. L. Berry, on Caret, 131095, Nealson, 131094, and Berif, 131096; 5th and 11th, J. L. Barnes, on Bataclau 2d, 125295; 7th, Dunhams, on Lowden, 128659; 8th, Champlin Bros., on Lord Tesako, 133120; 9th, R. P. Wait, on Arpee, 127146; 10th, J. B. Sheehy, on Guthrie's Pride, 132341.

Yearling Filly—1st, 10th and 11th, Hurdcroft Farm, on Sarah Bell, 131957, Monticello Maid, 131960, and Koinotte, 131958; 2d and 3d, Dunhams, on La Mascotte, 128660, and Lycette, 125279; 4th and 7th, H. W. Hoit, on Marguerite, 131162, and Amorita, 128082; 5th, S. M. Hague, on Roxie; 6th, R. P. Wait, on Ruth Lucile, 122571; 8th and 12th, Geo. Baker, on Queen Maltais, 132989, and Quality, 132245; 9th, J. T. Judge, on Ivraiess, 124585.

CLYDESDALES.

Exhibitors: G. Andrews & Son, Cambridge, Neb.; Barron Bros., Elkton, S. D.; H. Harris Ford, Storm Lake, Iowa; Haney & Santee, Danbury, Iowa; W. V. Hixon, Marengo, Iowa; Iowa State College, Ames, Iowa; G. W. Merna, Wyoming, Ill.; James Pedley, Britt, Iowa; J. P. Peterson, Herman, Neb.; Walter Rollo, Stockham, Neb.; John Skinner, Herman, Neb.; L. C. Tice, Sully, Iowa.

JUDGE..............................ANDREW MCFARLANE, Palo, Iowa.

Stallion Four Years Old or Over—1st, G. W. Merna, on Samuda, 15165 (15386); 2d, Barron Bros., on The Pinnacle, 13860; 3d, H. Harris Ford, on Prince Cedric, 16656; 4th, Haney & Santee, on Highland Duke, 15820; 5th, Jas. Pedley, on Tamerlane, 18960.

Stallion Over Three, Under Four—1st and 2d, H. Harris Ford, on Prince Ulysses, 18749, and Alexander, 18750; 3d, G. W. Merna, on George, 18405; 4th, Barron Bros., on The Harvester, 18555; 5th, G. Andrews & Son, on King's Topaz, 20094 (18796).

Stallion Over Two, Under Three—1st, H. Harris Ford, on Prince Fickland, 19354; 2d, Barron Bros., on Arcadia Prince, 19205; 3d, G. W. Merna, on King Cole, 19208.

Stallion Foal—1st, G. W. Merna, on King Diamond; 2d, J. P. Peterson, on Highland Pride; 3d, John Skinner, on Agitator.

Stallion Three Years or Over, Bred by Exhibitor—1st and 2d, H. Harris Ford, on Prince Ulysses, 18749, and Alexander, 18750; 3d, Barron Bros., on The Harvester, 18555.

Grand Champion Clydesdale stallion at the 1917 Iowa State Fair. Owned by G. W. Merna, Wyoming, Iowa.

Stallion Under Three, Bred by Exhibitor—1st and 2d, H. Harris Ford, on Proud Archer, 20041; and Prince Fickland, 19354; 3d and 4th, Barron Bros., Arcadia Prince 19205, and Davidson's Heir, 19923.

Yeld Mare Four Years or Over—1st, H. Harris Ford, on Una; 16194 (25422); 2d, G. W. Merna, on Samuda Violet, 17936.

Mare and Foal—1st, G. W. Merna, on Molly, 17291; 2d, H. Harris Ford, on Baroness Alexander, 16785 (28929); 3d and 4th, John Skinner on Bessie McCloud and Stout, 14028.

Filly Over Three, Under Four—1st, J. P. Peterson, on Eastlawn's Flash, 2d, 18622; 2d, Barron Bros., on Elmona, 18557; 3d, J. P. Peterson, on Maggie, 19622.

Filly Over Two, Under Three—1st and 2d, Barron Bros., on Arcadia Flower, 19204, and Primrose, 19203; 3d, G. W. Merna, on Hazel, 19555; 4th, John Skinner, on Garnet.

Mare Foal—1st, H. Harris Ford; 2d, John Skinner, on Sunbeam; 3d, Jas. Pedley, on Welcome Lady.

Mare Three Years or Over, Bred by Exhibitor—1st, G. W. Merna; 2nd, John Skinner; 3d, Barron Bros., on Elmona, 18557.

Mare Under Three Years, Bred by Exhibitor—1st and 2d, Barron Bros., on Arcadia Flower, 19204, and Primrose, 19203; 3d, W. V. Hixson, on Favorite, 2000; 4th, H. Harris Ford.

Senior Champion Stallion—G. W. Merna, on Samuda, 15165 (15386). Reserve—H. Harris Ford, on Ulysses.

Junior Champion Stallion—H. Harris Ford, on Proud Archer, 20041. Reserve—H. Harris Ford, on Prince Fickland, 19354.

Grand Champion Stallion—G. W. Merna, on Samuda, 15165 (15386). Reserve—H. Harris Ford, on Proud Archer, 20041.

Senior Champion Mare—G. W. Merna, on Samuda Violet, 17936. Reserve—H. Harris Ford, on Una, 16194 (25422).

Junior Champion Mare—L. C. Tice on Bonita, 19895. Reserve—Barron Bros., on Arcadia Flower, 19204.

Grand Champion Mare—L. C. Tice, on Bonita, 19895. Reserve—G. W. Merna, on Samuda Violet, 17936.

Champion Stallion Owned in Iowa—H. Harris Ford, on Proud Archer, 20041. Reserve—H. Harris Ford, on Prince Fickland, 19354.

Champion Mare Owned in Iowa—L. C. Tice, on Bonita, 19895.

Get of Sire—1st, H. Harris Ford; 2d, Barron Bros.; 3d, G. W. Merna; 4th, John Skinner.

Produce of Mare—1st, H. Harris Ford; 2d, J. P. Peterson; 3d, Barron Bros.; 4th, H. Harris Ford.

Stallion and Four Mares—1st, Barron Bros.; 2d, G. W. Merna; 3d, John Skinner.

Five Stallions Owned by Exhibitor—H. Harris Ford.

NATIONAL CLYDESDALE BREEDERS' FUTURITY.

Yearling Stallion—1st, H. Harris Ford, on Proud Archer; 2d, Barron Bros., on Davidson's Heir; 3d, Walter Rollo, on Fast Freight; 4th, L. C. Tice, on Prince Alexander.

Yearling Filly—1st and 7th, L. C. Tice, on Bonita, 19895, and Bethene, 19894; 2d, G. Andrews & Son, on Shy Ann, 19863; 3d, Iowa State College, on Pearl Queen, 19664; 4th, W. V. Hixson, on Favorite, 20000; 5th and 8th, Barron Bros., on Arcadia Rose, 19924 and Flower of Arcadia, 19925; 6th, G. W. Merna on Samuda Annie, 519977.

SHIRES.

Exhibitors: R. Connor Co., Auburndale, Wis.; Fred Chandler, Chariton, Iowa; Crawford & Griffin, Newton, Iowa; J. M. Gross, Adel, Iowa; J. L. Howard, Elkhart, Iowa; F. A. Huddlestun, Webster City, Iowa; Chas. Miller, Lostant, Ill.; Tom Skola, Slater, Iowa; C. H. & V. A. Summers, Malvern, Iowa; Truman's Pioneer Stud Farm, Bushnell, Ill.

JUDGE..............................PROF. W. H. REW, Ames, Iowa.

Stallion Four Years Old or Over—1st, Truman's Pioneer Stud Farm, on Kirtling Bold Lion, 16769 (30593); 2d, C. H. & V. A. Summers, on Stubbing Court Manners 2d, 14557 (31132); 3d, Truman's Pioneer Stud Farm, on Royal Friar 2d, 15716 (32782); 4th, R. Connor Co., on Royal Patch, 14188; 5th, Crawford & Griffin, on College Nailstone, 13606.

Stallion Over Three, Under Four—1st and 2d, Truman's Pioneer Stud Farm, on Eaton Guardsman, 16770 (33174), and Eastwood Insurgent, 16810 (33171).

Stallion Over Two, Under Three—1st, 2d, 4th and 6th, Truman's Pioneer Stud Farm, on Buchen's Boro Bluster, 16314, Wrydeland's Drayman, 16064 (34476), Boro Shamrock, 16069 (33752), and Weybread Don 16813 (33660); 3d, Tom Skola, on Starlight S. King, 15903; 5th, F. A. Huddlestun, on Edgewood Major, 16284; 7th, C. H. & V. A. Summers, on Tom Lindelwood, 16251; 8th, Chas. Miller, on Thunderbolt Bob, 16481; 9th, Fred Chandler, on The Shunter, 17378; 10th, R. Connor Co., on Lumberman's Dray King, 15973.

Stallion Foal—1st, R. Connor Co., on Boro's Fuchsia; 2d, Crawford & Griffin, on Dunsmore Laddie.

Stallion Under Three Years, Bred by Exhibitor—1st, Truman's Pioneer Stud Farm, on Truman's Blusterer, 17002; 2d and 3d, F. A. Huddlestun, on Edgewood Major, 16284, and Edgewood Baronet; 4th, C. H. & V. A. Summers, on Tom Lindelwood, 16251.

Yeld Mare Four Years or Over—1st, J. L. Howard, on Ankeny Starlight, 10529.

Mare and Foal—1st and 2d, Crawford & Griffin, on Cawsbon Ebony, 14583 (70158), and Lassena, 14579 (67595); 3d, R. Connor Co., on Fuchsia, 14571.

Filly Over Three Under Four—1st and 2d, R. Connor Co., on Dray King Fashion, 15389, and Dray Queen Star, 15388.

Filly Over Two, Under Three—1st, C. H. & V. A. Summers, on Ciceter Blossom, 16485; 3d, R. Connor Co., on Queen of Fashion, 16566; 4th, C. H. & V. A. Summers, on Sherwood Queen.

Mare Foal—1st, Crawford & Griffin, on Dunsmore Princess.

Mare Three Years or Over, Bred by Exhibitor—1st and 2d, R. Connor Co., on Dray King Fashion and Dray Queen Star, 15388.

Mare Under Three Years, Bred by Exhibitor—1st, 2d and 4th, C. H. & V. A. Summers, on Rampton Clara, 16486, Ciceter Blossom, 16485, and Sherwood Queen; 3d, R. Connor Co., on Queen of Fashion, 16566.

Senior Champion Stallion—Truman's Pioneer Stud Farm, on Kirtling Bold Lion, 16769 (30593). Reserve—C. H. & V. A. Summers on Stubbing Court Manners 2d, 14557 (31132).

Junior Champion Stallion—Truman's Pioneer Stud Farm, on Truman's Blusterer, 17002. Reserve—Truman's Pioneer Stud Farm on Buchen's Boro Blusterer, 16314.

Grand Champion Stallion—Truman's Pioneer Stud Farm, on Kirtling Bold Lion, 16769 (30593). Reserve—Truman's Pioneer Stud Farm, on Truman's Blusterer, 17002.

Senior Champion Mare—Crawford & Griffin, on Lassena, 14579 (67595). Reserve—J. L. Howard, on Ankeny Starlight, 10529.

Junior Champion Mare—R. Connor Co., on Dray King Fashion, 15389. Reserve—C. H. & V. A. Summers, on Rampton Clara, 16486.

Grand Champion Mare—R. Connor Co., on Dray King Fashion, 15389.

Champion Stallion Owned in Iowa—C. H. & V. A. Summers, on Stubbing Court Manners. Reserve—Crawford & Griffin on College Nailstone, 13606.

Champion Mare Owned in Iowa—C. H. & V. A. Summers, on Rampton Clara, 16486. Reserve—Crawford & Griffin, on Lassena, 14579 (67595).

Get of Sire—1st, R. Connor Co.

Produce of Mare—1st, R. Connor Co.; 2d, J. L. Howard.

Stallion and Four Mares—C. H. & V. A. Summers.

Five Stallions, Owned by Exhibitor—Truman's Pioneer Stud Farm.

SPECIALS OFFERED BY SHIRE HORSE SOCIETY OF GREAT BRITAIN AND IRELAND.

Best Shire Stallion—Truman's Pioneer Stud Farm, on Kirtling Bold Lion, 16769 (30593).

Best Shire Mare—R. Connor Co., on Dray King Fashion, 15389.

SPECIAL PRIZE OFFERED BY AMERICAN SHIRE HORSE ASSOCIATION.

Champion Shire Stallion, Any Age—Truman's Pioneer Stud Farm, on Kirtling Bold Lion, 16769 (30593).

NATIONAL SHIRE BREEDERS' FUTURITY.

Yearling Stallion—1st, Truman's Pioneer Stud Farm, on Truman's Blusterer, 17002; 2d, F. A. Huddlestun, on Edgewood Baronet; 3d, Chas. Miller, on Sambo; 4th, J. L. Howard, on Prideland's Patton.

Yearling Filly—1st, C. H. & V. A. Summers, on Princess Manners, 17413; 2d, J. M. Gross, on Isabell Darling, 16778.

BELGIANS.

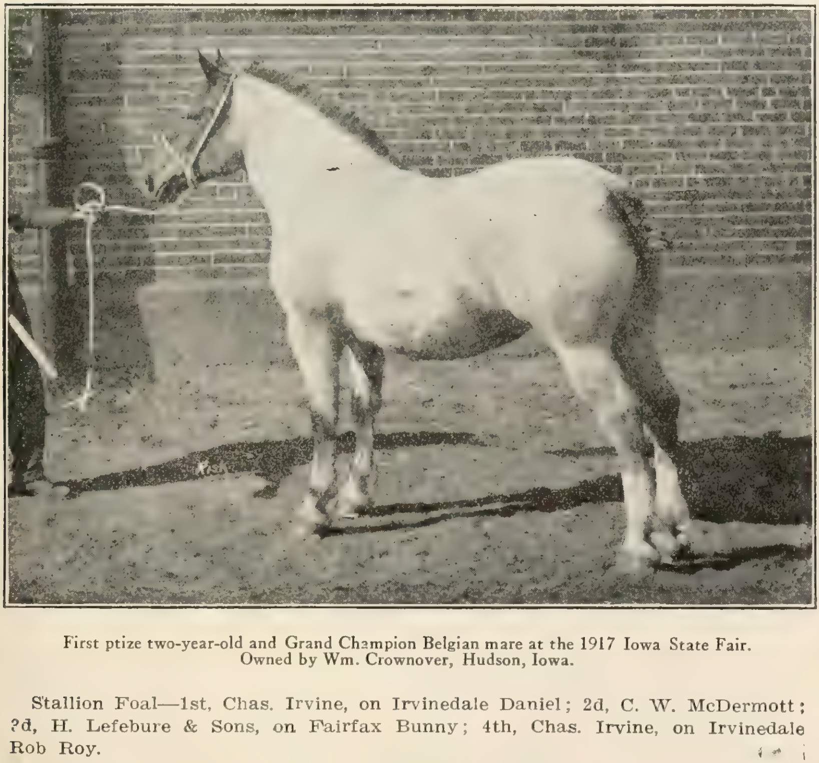
Exhibitors: H. V. Caldwell, Kanawha, Iowa; Champlin Bros., Clinton, Iowa; Fred Chandler, Chariton, Iowa; Crawford & Griffin, Newton, Iowa; Wm. Crownover, Hudson, Iowa; W. C. Estes, Packwood, Iowa; C. G. Good, Ogden, Iowa; Chas. Irvine, Ankeny, Iowa; H. Lefebure & Sons, Fairfax, Iowa; Markey Bros., Reynolds, Ill.; C. W. McDermott, Wiota, Iowa; W. T. & U. I. Sinnard, Indianola, Iowa; I. W. Van Nice, Garrison, Iowa.

JUDGE............................W. J. KENNEDY, Sioux City, Iowa.

Stallion Four Years Old or Over—1st and 3d, Chas. Irvine, on Irvinedale Rowdy, 8428, and Canon, 8775 (91416); 2d, 4th and 5th, Champlin Bros., on Paul de Roosbeke, 7786, Caesar, 7779, and Prince, 7833.

Stallion Over Three, Under Four—1st, C. G. Good, on Jupiter, 8805; 2d, H. Lefebure & Sons, on Indigene, 9487; 3d, Markey Bros., on Hamlet Boy, 9250; 4th, Fred Chandler, on Wilson, 9130; 5th, I. W. Nice, on Reve d'Or II, 9079.

Stallion Over Two, Under Three—1st, Champlin Bros., on King de Roosbeke, 10094; 2d, Chas. Irvine, on Jupiter's Hero, 9738; 3d and 6th, H. Lefebure & Sons, on Sultan, Jr, 9597, and Duke of Elmwood, 9957; 4th, Fred Chandler, on Dilla, 9500; 5th and 7th, C. G. Good, on Farceur, 10402, and Oakdale Ben; 8th, Wm. Crownover, on Kaout, 9652; 9th, W. C. Estes, on Dutch Boy, 9515; 10th, I. W. Van Nice, on Duke Lavante, 10131.



First ptize two-year-old and Grand Champion Belgian mare at the 1917 Iowa State Fair.
Owned by Wm. Crownover, Hudson, Iowa.

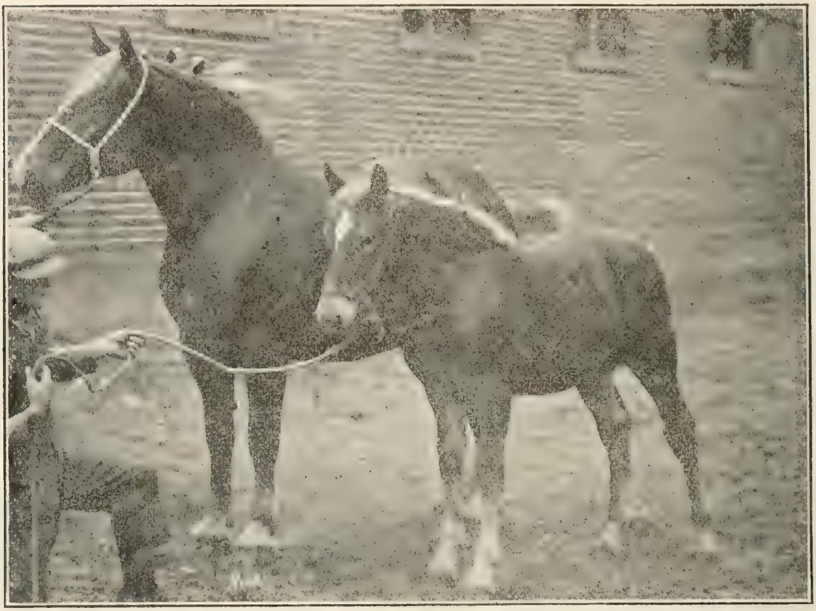
Stallion Foal—1st, Chas. Irvine, on Irvinedale Daniel; 2d, C. W. McDermott; ?d, H. Lefebure & Sons, on Fairfax Bunny; 4th, Chas. Irvine, on Irvinedale Rob Roy.

Stallion Three Years Old or Over, Bred by Exhibitor—1st, Chas. Irvine, on Irvinedale Rowdy, 8428; 2d, H. Lefebure & Sons, on Indigene, 9487; 3d, Markey Bros., on Hamlet Boy, 9250.

Stallion Under Three Years, Bred by Exhibitor—1st, Champlin Bros., on King de Roosbeke, 10084; 2d, H. Lefebure & Sons, on Clarion de Balcan; 3d and 4th, C. G. Good, on Ruben and Mengor, 2d, 10403.

Yeld Mare Four Years Old or Over—1st and 2d, Markey Bros., on Revuse de Marche, 2442, and Bijou de Leke, 2448.

Mare and Foal—1st, Chas. Irvine on Suzette, 4031; 2d, Champlin Bros., on Sadie; 3d, W. C. Estes, on Bay Beauty, 3379; 4th, Chas. Irvine, on Dora, 4397.



First Prize Belgian mare and foal at the 1918 Iowa State Fair.
Owned by Charles Irvine, Ankeny Iowa

Filly Over Three, Under Four—1st, Wm. Crownover, on Lista, 4869; 2d and 3d, Wm. Crownover, on Salome, 4871, and Rosette, 4870; 4th, H. Lefebure & Sons, on Radius 4th, 4703.

Filly Over Two, Under Three—1st and 2d, Wm. Crownover, on Paramount Lola, 4987, and Cora, 5208; 3d, H. Lefebure & Sons, on Nanette 2d, 4938; 4th, Chas. Irvine on Irvinedale Paulette, 5287.

Mare Foal—1st, Chas. Irvine, on Cecil; 2d, H. Lefebure & Sons, on Fairfax Fudge; 3d, W. C. Estes; 4th, Champlin Bros., on Sadie de Roosbeke, 6066.

Mare Three Years Old or Over, Bred by Exhibitor—1st and 2d, Wm. Crownover, on Lista, 4869, and Salome, 4871; 3d, H. Lefebure & Sons, on Radius 4th, 4703; 4th. W. C. Estes, on Bay Beauty, 3379.

Mare Under Three Years, Bred by Exhibitor—1st, Wm. Crownover, on Paramount Lola, 4987; 2d and 3d, Wm. Crownover, on Paramount Lulu, 6014, and Paramount Delsant, 5318; 4th, H. Lefebure & Sons, on Nanette 2d, 4938.

Senior Champion Stallion—Chas. Irvine, on Irvinedale Rowdy, 8428. Reserve—C. G. Good, on Jupiter, 8805.

Junior Champion Stallion—Champlin Bros., on King de Roosbeke, 10094. Reserve—H. Lefebure & Sons, on Clarion de Balcan, 10431.

Grand Champion Stallion—Chas. Irvine, on Irvinedale Rowdy, 8428. Reserve—Champlin Bros., on King de Roosbeke, 10094.

Senior Champion Mare—Wm. Crownover, on Lista, 4369. Reserve—Wm. Crownover, on Salome, 4871.

Junior Champion Mare—Wm. Crownover, on Paramount Lola, 4987. Reserve—Wm. Crownover, on Paramount Lulu, 6014.

Grand Champion Mare—Wm. Crownover, on Paramount Lola, 4987. Reserve—Wm. Crownover, on Salome, 4871.

Champion Stallion Owned in Iowa—Chas. Irvine, on Irvinedale Rowdy, 8428. Reserve—C. G. Good, on Jupiter, 8805.

Champion Mare Owned in Iowa—Wm. Crownover, on Paramount Lola, 4987. Reserve—Wm. Crownover, on Salome, 4871.

Get of Sire—1st and 2d, Wm. Crownover; 3d, Chas. Irvine.

Produce of Mare—1st, 2d and 3d, Wm. Crownover; 4th, W. C. Estes.

Stallion and Four Mares—1st, Wm. Crownover; 2d, Chas. Irvine; 3d, W. C. Estes.

Five Stallions Owned by Exhibitor—1st, Champlin Bros.; 2d, C. G. Good.

SPECIAL PRIZES OFFERED BY THE AMERICAN ASSOCIATION OF IMPORTERS AND BREEDERS OF BELGIAN DRAFT HORSES.

Stallion Four Years Old or Over—1st, Chas. Irvine, on Irvinedale Rowdy, 8428; 2d, Champlin Bros., on Paul de Roosbeke, 7786; 3d, Chas. Irvine, on Cannon, 8775 (91416); 4th and 5th, Champlin Bros., on Cesar, 7779, and Prince, 7833.

Stallion Three Years, Under Four—1st, C. G. Good, on Jupiter, 8805; 2d, H. Lefebure & Sons, on Imogene, 9487; 3d, Markey Bros., on Hamlet Boy, 9250; 4th, Fred Chandler, on Wilson, 9130; 5th, I. W. Van Nice, on Reve D'Or 2d, 9079.

Stallion Two Years, Under Three—1st, Champlin Bros., on King de Rocseke, 10094; 2d, Chas. Irvine, on Jupiter Hero, 9738; 3d, H. Lefebure & Sons, on Sultan, Jr., 9597; 4th, Fred Chandler, on Dilla, 9500; 5th, C. G. Good, on Farceur, 10402.

Stallion One Year, Under Two—1st and 2d, H. Lefebure & Sons, on Clarion Du Balcan, 10431, and Fairfax Jean, 10421; 3d, Fred Chandler, on Bruno; 4th and 5th, C. G. Good, on Dragon and Ruban.

Mare Four Years Old or Over—1st and 2d, Markey Bros., on Revuse De Marche, 2442, and Bijou De Leke, 2448.

Mare Three Years, Under Four—1st and 2d, Wm. Crownover, on Lista, 4869, and Salome, 4871; 3d, H. Lefebure & Sons, on Radius 4th; 4th, W. C. Estes, on Bay Beauty, 3379.

Mare Two Years, Under Three—1st, 2d and 5th, Wm. Crownover, on Paramount Lola, 4987, Cora, and Paramount Delsant, 5318; 3d, H. Lefebure & Sons, on Nanette 2d, 4938; 4th, Chas. Irvine, on Irvinedale Paulette, 5287.

Mare One Year, Under Two—1st and 3d, Wm. Crownover, on Paramount Lulu, 6014, and Paramount Selma, 6015; 2d and 4th, C. G. Good, on Princess B., and Oakdale Girl.

Champion Stallion Under Three Years—Champlin Bros., on King de Roosbeke, 10094. Reserve—H. Lefebure & Sons, on Clarion Du Balcan, 10431.

Champion Stallion Over Three Years—Chas. Irvine on Irvinedale Rowdy, 8428. Reserve—C. G. Good, on Jupiter, 8805.

Grand Champion Stallion—Chas. Irvine on Irvinedale Rowdy, 8428. Reserve—Champlin Bros., on King de Roosbeke, 10094.

Champion Mare Under Three Years—Wm. Crownover, on Paramount Lola, 4987. Reserve—Wm. Crownover, on Paramount Lulu, 6014.

Champion Mare Over Three Years—Wm. Crownover, on Lista, 4869. Reserve—Wm. Crownover, on Salome, 4871.

Grand Champion Mare—Wm. Crownover, on Paramount Lola, 4987. Reserve—Wm. Crownover on Salome, 4871.

NATIONAL BELGIAN BREEDERS' FUTURITY.

Yearling Stallion—1st, 2d and 9th, H. Lefebure, on Clarion Balcan, 10431, Fairfax Jean, 10421, and Expert, 9715; 3d and 4th, C. G. Good, on Dragon, and

Ruban; 5th, H. M. Caldwell, on Mayence, 10414; 6th, Chas. Irvine, on Irvinedale Romer; 7th, Wm. Crownover, on Prince, 10250; 8th, W. C. Estes, on Monarch, 10320; 10th, C. W. McDermott, on Duvois, 10197.

Yearling Filly—1st, 3d, 5th and 6th, Wm. Crownover, on Paramount Lulu, 6014, Paramount Selma, 6015, Paramount Neoma, 6016, and Paramount Maveri, 6013; 2d and 4th, C. G. Good, on Princess B., and Oakdale Girl; 7th, Champlin Bros., on Alice de Roosbeke, 6066; 8th, H. M. Caldwell, on Alice, 6071; 9th, Chas. Irvine, on Irvinedale Neva; 10th, H. Lefebure & Sons, on Lola Betty, 5509.

DRAFT.

Exhibitors: Champlin Bros., Clinton, Iowa; C. Courtney Couch, Adel, Iowa; W. G. Farlow, Ankeny, Iowa; J. L. Hildreth & Sons, Elkhart, Iowa; J. S. Hildreth, Elkhart, Iowa; J. L. Howard, Elkhart, Iowa; Iowa State College, Ames, Iowa; C. H. & V. A. Summers, Malvern, Iowa; Truman's Pioneer Stud Farm, Bushnell, Ill.

JUDGE..................................R. B. OGILVIE, Chicago, Ill.

IOWA SPECIALS.

Gelding or Mare Four Years or Over—1st, W. V. Hixson, on Victor; 2d, H. Harris Ford, on Dan; 3d, C. H. & V. A. Summers, on Red Cloud; 4th, Chas. Irvine, on Prince; 5th, Champlin Bros., on Della.

Gelding or Mare Three Years, Under Four—1st and 2d, Iowa State College, on American Prince and American Pride; 3d, C. H. & V. A. Summers, on The Friar; 4th, C. G. Good, on Mack; 5th, J. S. Hildreth, on Daisy.

Gelding or Mare Two Years, Under Three—1st, J. S. Hildreth, on Molly; 2d, C. H. & V. A. Summers, on George; 3d, C. Courtney Couch, on Dick; 4th, Crawford & Griffin, on Babe.

Gelding or Mare One Year, Under Two—1st and 3d, W. G. Farlow; 2d, J. L. Hildreth & Son, on Ankeny Ruthton.

Horse or Filly Foal—1st, J. S. Hildreth, on Topsy.

Farmer's Team—1st, J. L. Howard; 2d, C. H. & V. A. Summers, on Red Cloud, and The Friar; 3rd and 5th, Chas. Irvine; 4th, Crawford & Griffin, on Lassie and Ebony.

OPEN CLASS.

Gelding or Mare Three Years Old or Over—1st, Iowa State College on American Priner; 2d and 5th, C. H. & V. A. Summers, on Jim, and Red Cloud; 3d, W. V. Hixson, on Victor; 4th, H. Harris Ford, on Dan.

Champion Gelding or Mare—Iowa State College, on American Priner. Reserve—W. G. Farlow.

Draft Team in Harness—1st, C. H. & V. A. Summers, on Red Cloud, and The Friar; 2d, Chas. Irvine; 3d, Geo. Baker.

SPECIAL PRIZE OFFERED BY R. B. OGILVIE, CHICAGO, ILL.

Best Gelding or Grade Draft Mare, Bred and Owned in Iowa—Iowa State College on American Priner.

HARNESS AND SHOW HORSES.

Exhibitors: F. E. Barton, Des Moines, Iowa; A. L. Champlin, Ames, Iowa; First Cavalry Riding Academy, Chicago, Ill.; Hamilton Bros., Keota, Iowa; W. H. Hanna, Waterloo, Iowa; John Hemingway & Fred Martin, Hampton, Iowa; Holmes Bros., Milton, Iowa; F. M. Kattenstroit, Chicago, Ill.; Loula Long, Kansas City, Mo.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; Oakland Stable, Oskaloosa, Iowa; T. J. Shaw, Stuart, Iowa; C. R. Wells & Bruce Robinson, Washington, Iowa.

JUDGES.............................
E. B. CLANCY, Guelph, Canada.
W. A. DOBSON, Sioux City, Ia.
HENRY CULLINS, Devon, Pa.

ROADSTERS.

Stallion, Mare or Gelding—1st, Loula Long, on Anticipation; 2d and 3d, Hamilton Bros., on Buster Bezant, 59463, and Peggy Bloom, 13359; 4th, Thomas Bass, on Homer Denison.

Pair Stallions, Mares or Geldings—1st, Loula Long, on Aspiration and Anticipation, 2d, Hamilton Bros., on Buster Bezant, 59463, and mate; 3d, Oakland Stable, on Hester Prince, and mate.

RUNABOUTS.

Stallion, Mare or Gelding—1st, 2d and 3d, Mr. & Mrs. O. J. Mooers, on Advance Guard, The Dainty Miss, and Liza Jane; 4th, Thomas Bass, on Homer Denison.

Pair of Stallions, Mares or Geldings—First, second and third, Mr. and Mrs. O. J. Mooers, on Troublesome Tommy and mate, Advance Guard and mate and The Dainty Miss and mate; fourth, Hamilton Bros., on Buster Bezant and mate.

LADIES' TURNOUT.

Single Mare or Gelding—First and second, Mr. and Mrs. O. J. Mooers, on Lady Wundermere and Liza Jane; third, A. L. Champlin, on High Ball.

Pair of Mares or Geldings or Mare and Gelding—First and fourth, Mr. and Mrs. O. J. Mooers on The Pick of the Basket and The Dainty Miss, The Spring Maid and mate and unnamed; third, A. L. Champlin, on May Maiden and mate.

HIGH STEPPERS AND PARK HORSES.

Stallion, Mare or Gelding, 15 to 15-2—First, second, third and fourth, Mr. and Mrs. O. J. Mooers, on The Pick of the Basket, unnamed, Adora and The Dainty Miss.

Stallion, Mare or Gelding, 15-2 and over—First F. Marshall Kattenstroth, on General Joffrey; second and third, Mr. and Mrs. O. J. Mooers, on Gallant Lad and Liza Jane; fourth, A. L. Chapman, on High Ball.

Pair of Stallions, Mares or Geldings, 15 to 15-2—First, second, third and fourth, Mr. and Mrs. O. J. Mooers, on Advance Guard and mate, The Pick of the Basket and mate, Lady Wundermere and mate and Adora and mate.

Pair of Stallions, Mares or Geldings, over 15-2—First and second, Mr. and Mrs. O. J. Mooers, on Bit of a Devil and mate and Eliza Jane and mate; third and fourth, A. L. Champlin, on May Maiden and mate and Fair Eliza and mate.

Stallion, Mare or Gelding, any height, horse alone considered—First, second, third and fourth, Mr. and Mrs. O. J. Mooers.

Gig Horses Not Exceeding 15-2—First, second, third and fourth, Mr. and Mrs. O. J. Mooers, on The Spring Maid, Pick of the Basket, unnamed and The Dainty Miss.

Gig Horses over 15-2—First, second and third, Mr. and Mrs. O. J. Mooers, on Gallant Lad, Bit of a Devil and Liza Jane; fourth, A. L. Champlin, on High Ball.

Tandem Team Wheeler under 15-2—First, Mr. and Mrs. O. J. Mooers, on Bit of a Devil and mate; second, A. L. Champlin, on Fair Eliza and mate.

Tandem Team Wheeler under 15-2—First and second, Mr. and Mrs. O. J. Mooers, on Lady Wundermere and mate and Adora and Advance Guard; third, A. L. Champlin.

Tandem Team, any size—First and second, Mr. and Mrs. O. J. Mooers, on Adora and mate and unnamed; third, A. L. Champlin.

Champlin.

Unicorns—First, Mr. and Mrs. O. J. Mooers; second, A. L. Champlin.

Four-in-Hand Road Four—First, Mr. and Mrs. O. J. Mooers; second, A. L. Champlin.

Champion Harness Stallion—Mr. and Mrs. O. J. Mooers, on Advance Guard.

Champion Harness Mare or Gelding—Mr. and Mrs. O. J. Mooers, on Maid in America.

MILITARY HORSES.

Stallion Suitable to Sire Cavalry Remounts, shown to halter—First and second, Hamilton Bros., on unnamed and Buster Bezant; third, Holmes Bros., on Redlac Howe 5214; fourth, Morgan Horse Farm on Tommy Deane 6873; fifth, Oscar Smith, on Dandy 5881.

Gelding Suitable for Officer's Mount—First, W. H. Hanna, on Nigger Denmark; second, First Cavalry Riding Academy, on Gray Cloud; third, Oakdale Stable; fourth, Hamilton Bros., on Purity.

HUNTERS AND HIGH JUMPERS.

Light Weight Hunters, Carrying up to 150 Pounds, to Hounds—First, second and third, First Cavalry Riding Academy, on Gray Cloud, Alston and unnamed; fourth, Wells & Robinson, on Duke 58615.

All other awards in the hunter and jumper classes went to the First Cavalry Riding Academy.

STANDARD BRED.

JUDGE............................W. A. DOBSON, Sioux City, Iowa.

Yeld Mare Four Years Old or Over—First, O. J. Mooers, on The Spring Maid; second, Oakland Stable; third, F. E. Barton, on Marie Look Sir.

Stallion Four Years or Over—First, T. J. Shaw, on Red Mako 42694; second, Hamilton Bros., on Buster Bezant 59463; third, Hamilton Bros.

Stallion Over Two, Under Three—First, E. A. Elliott, on Bingen's Best.

Champion Mare—Mr. and Mrs. O. J. Mooers, on The Spring Maid.

SADDLE.

JUDGE..................................HENRY CULLINS, Devon, Pa.

Exhibitors: Thomas Bass, Mexico, Mo.; H. C. Downing, Des Moines, Iowa; Dr. T. F. Duhigg, Des Moines, Iowa; First Cavalry Riding Academy, Chicago, Ill.; Hamilton Bros., Keota, Iowa; F. M. Kattenstroth, Chicago, Ill.; H. B. Kinnard, Des Moines, Iowa; Loula Long, Kansas City, Mo.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; F. D. McDonell, Tulsa, Okla.; Oakland Stable, Oskaloosa, Iowa; C. F. Storm, Dexter, Iowa; C. R. Wells and Bruce Robinson, Washington, Iowa.

FIVE-GAITED.

Stallion Four Years or Over—First, Loula Long, on Easter Cloud 4128; second, Hamilton Bros., on Kentucky Champ Clark 5602; third, Thomas Bass, on Golden Courier 6590; fourth C. R. Wells and Bruce Robinson, on Rex Ortiz of Denmark 5813.

Stallion Three Years, Under Four—First, C. R. Wells and Bruce Robinson, on Lonnie McDonald 7114; second, C. F. Storm, on Iowa King 6987.

Stallion Two Years, Under Three—First C. F. Storm, on Astral McDonald 7519.

Mare Four Years or Over—First and second, Loula Long, on LaFrance 9049 and Sally America; third, Thomas Bass, on Bohemian Music 9888; fourth and fifth, F. M. Kattenstroth on Sunny Wild Rose and Glen Glory.

Mare Three Years, Under Four—First, Hamilton Bros., on Virginia Lear 13355; second Loula Long, on Rexie Dare 12299; third, Oakland Stable, on Golden Butterfly.

Gelding Four Years or Over—First, Loula Long, on Prince of Melbourne; second, Thomas Bass, on The Southerner; third and fourth, Hamilton Bros., on Johnnie Walker and Sterling Silver.

Gelding Three Years, Under Four—First, Oakland Stable, on Dandy Dugger.

WALK, TROT OR CANTER.

Mare or Gelding, any age—First, Loula Long, on Chloe Malone; second, Hamilton Bros., on Patria; third, Loula Long, on Nance O'Neill; fourth, F. M. Kattenstroth, on General Pershing; fifth, Thomas Bass, on Nickel Plate.

Mare or Gelding of Suitable Type, Ridden by Lady—First, Thomas Bass, on Nickel Plate; second, Captain DeLaney, on Artillery Girl; third, H. B. Kinnard, on Princess Charming 5913; fourth W. H. Hanna on Nigger Denmark; fifth, First Cavalry Riding Academy.

Best Lady Rider—First, H. B. Kinnard, on Princess Charming 5913; second, Mrs. G. W. DeLaney; third, W. H. Hanna.

COMBINED HARNESS AND SADDLE HORSES.

Stallion, Mare or Gelding, Any Age, Five-Gaited—First and fifth, Loula Long, on Maurine Fisher 10882, and Prince of Melbourne; second, F. M. Kattenstroth, on Columbia Chief 5437; third, Thomas Bass on Bohemian Music 9888; fourth, Hamilton Bros., on Sterling Silver.

Stallion, Mare or Gelding, Any Age, Three-Gaited—First, Loula Long, on Nance O'Neill; second, F. M. Kattenstroth, on General Pershing; third, Hamilton Bros., on Kentucky Champ Clark 5602; fourth, Oakland Stable, on Golden Butterfly; fifth, W. H. Hanna, on Beauty.

HIGH SCHOOL HORSES.

Stallion, Mare or Gelding, Any Age—First, Thomas Bass, on Belle Beach; second, C. R. Wells and Bruce Robinson, on Rex Ortiz of Denmark 5813; third, Oakland Stable, on Dixie Dew; fourth, C. R. Wells and Bruce Robinson, on Duke 58615.

IOWA SPECIAL FIVE-GAITED.

Mare or Gelding Three Years or Over—First, H. C. Downing, on Cigaret; second, Hamilton Bros., on Peggy Bloom; third, Wells and Robinson, on Castlewood Bell 11946; fourth, Miss DeLaney on Artillery Girl.

Stallion Three Years or Over—First, Hamilton Bros., on Kentucky Champ Clark 5602; second, Wells and Robinson, on Lonnie McDonald 7114; fourth, C. F. Storm, on Iowa King 6987.

SPECIAL OFFERED BY AMERICAN SADDLE HORSE BREEDERS' ASSOCIATION.

Stallion or Mare Three Years or Over, Shown to Hand—First, Hamilton Bros., on Virginia Lear 13355.

MORGANS.

Exhibitors: James C. Brunk, Springfield, Ill.; Rev. H. F. Buettner, Hampton, Iowa; Harry D. Hograve, Plainfield, Iowa; Morgan Horse Farm, Plainfield, Iowa; Oscar Smith, Plainfield, Iowa.

JUDGE.............................W. A. DOBSON, Sioux City, Iowa.

Stallion Four Years or Over—First Morgan Horse Farm, on Tommy Dean 6873; second, Oscar Smith on Dandy 5881.

Stallion Two Years, Under Three—First, Morgan Horse Farm, on Jack Hulme 5670.

Stallion—Over One, Under Two—First and Second Morgan Horse Farm, on Jiggs 5650 and Dick Dean, Vol. 4.

Mare Four Years or Over—First, Morgan Horse Farm, on Ruperta, Vol. 3.

Filly Over Two, Under Three—First, Harry D. Hograve, on Lady Jane Bay, Vol. 4; second, Rev. H. F. Buettner, on Flossy Hudson.

Filly Over One, Under Two—First, Morgan Horse Farm on Village Belle, Vol. 4.

Stallion or Mare Foal—First Morgan Horse Farm, on Daisy Dean, Vol. 4.

Champion Stallion—Morgan Horse Farm, on Tommy Dean. Reserve—Oscar Smith on Dandy.

Champion Mare—Morgan Horse Farm, on Ruperta. Reserve—Morgan Horse Farm, on Daisy Dean.

Get of Stallion—First, Morgan Horse Farm.

SPECIAL PREMIUM OFFERED BY THE MORGAN HORSE CLUB.

Morgan Horse Farm, on Tommy Dean.

HACKNEYS.

Exhibitors: C. E. Bunn, Peoria, Ill.; A. L. Champlin, Ames, Iowa; Truman's Pioneer Stud Farm, Bushnell, Ill.

Stallion Four Years Old or Over—First, Truman's Pioneer Stud Farm. on Romping Flash 1740 (12150); second, A. L. Champlin, on Wilcox Mathias 1335.

Stallion Over Two, Under Three—First, C. E. Bunn, on Umpire 1918.

Stallion Foal—First, A. L. Champlin.

Yeld Mare Four Years Old or Over—First A. L. Champlin, on Fair Eliza 3182.

Mare Over Three, Under Four—First, A. L. Champlin, on Prince of Greenhill's Lady 3184.

Filly Over Two, Under Three—First, C. E. Bunn, on Moonbeam 3067.

Mare Foal—First, A. L. Champlin, on Lady Greenhill.

Champion Stallion—Truman's Pioneer Stud Farm, on Romping Flash 1740 (12150). Reserve—A. L. Champlin, on Wilson Mathias 1335.

Champion Mare—A. L. Champlin, on Fair Eliza 3182. Reserve—A. L. Champlin, on Lady Greenhill.

Produce of Mare—First, C. E. Bunn.

Grand Display, Five Animals Owned by Exhibitor—A. L. Champlin.

SPECIAL PRIZE OFFERED BY THE AMERICAN HACKNEY HORSE SOCIETY.

Champion Stallion—Truman's Pioneer Stud Farm, on Romping Flash 1740 (12150).

WELSH PONIES.

Exhibitors: C. E. Bunn, Peoria, Ill.; Mrs. Adam Stirling, Des Moines, Iowa.

JUDGE.....................W. J. RUTHERFORD, Saskatchewan, Canada.

Stallion Four Years Old or Over—First and Second, C. E. Bunn, on King Cole 197, and John Brown, 884.

Stallion Three Years, Under Four—First and Second, Mrs. Adam Stirling, on Royal Regent and Top Notch 740.

Mare Four Years Old or Over—First, C. E. Bunn, on Llwyn Bess 481; second and third, Mrs. Adam Stirling, on Edith and Forest Park Dina (4102).

Mare Three Years, Under Four—First, C. E. Bunn, on Taler's Gift 881.

Mare Two Years, Under Three—First, C. E. Bunn.

Stallion in Harness—First and second, C. E. Bunn, on King Cole 197 and John Brown, 884; third, Mrs. Adam Stirling, on Royal Regent.

Gelding or Mare in Harness—First and Second, C. E. Bunn, on Bess and Taler's Gift 881; third, Mrs. Adam Stirling, on Edith 223.

Pair of Ponies in Harness—First, C. E. Bunn, on John Brown 884 and Taylor Gift 881; second, Mrs. Adam Stirling, on Edith 223 and Dinah.

Tandem Team—First, C. E. Bunn, on John Brown 884 and Bess; second, Mrs. Adam Stirling, on Edith 223 and Dinah.

Pony Under Saddle—First, C. E. Bunn, on Ucinda; second and third, Mrs. Adam Stirling, on Dinah and Walsh Girl.

Four-in-Hand—First, C. E. Bunn; second, Mrs. Adam Stirling.

Champion Stallion, Mare or Gelding in Harness—C. E. Bunn, on King Cole.

SHETLAND PONIES.

Exhibitors: Mrs. Adam Stirling, Des Moines, Iowa; Bridgford Farms, Joy, Ill.; George Briedson, Panora, Iowa; C. E. Bunn, Peoria, Ill.; Welty Shetland Pony Farm, Nevada Iowa; Hugh Hall, Des Moines, Iowa.

JUDGE .... W. J. RUTHERFORD, Saskatchewan, Canada.

Stallion Four Years Old or Over—First, C. E. Bunn, on Prince Patten 17205; second and third Bridgford Farms on Harum's Sensation and Sensational Larig; fourth, Mrs. Adam Stirling, on Belle Meade Faultless 14459.

Stallion Three Years, Under Four—First and second, C. E. Bunn, on Best of All 17200 and Prince Charming 11782; third and fourth, Bridgford Farms, on Piper Heidseick and Farnum.

Stallion Two Years, Under Three—First, Bridgford Farms, on Marvin; second, Welty Shetland Pony Farm, on Locust Jack 16600; third, C. E. Bunn, on Model 16314.

Stallion Over One, Under Two—First, C. E. Bunn, on Vesuvius 17203; second, Bridgford Farms, on John Manly.

Stallion or Mare Foal—First, Hugh Hall; second, Mrs. Adam Stirling; third, George Brideson; fourth, Welty Shetland Pony Farm.

Mare Four Years Old or Over—First and second, C. E. Bunn, on Ovilta 10620, and Quapho 14346; third and fourth, Bridgford Farms, on Eunice and Queen of the May.

Mare Three Years, Under Four—First, Welty Shetland Pony Farm, on Fancv Gem 15596; second, C. E. Bunn, on Theolita 16258; third, Bridgford Farms, on Josephine; fourth, Mrs. Adam Stirling, on Black Bird.

Mare Two Years, Under Three—First and second, Bridgford Farms, on Miss Bonnie and Mildred; third, Mrs. Adam Stirling, on Silver Spring Princess 26578; fourth, C. E. Bunn, on Ultimatum 17783.

Mare Over One, Under Two—First, Welty Shetland Pony Farm, on Kancetta; second, C. E. Bunn, on Vesta 17201; third and fourth, Bridgford Farms, on Miss Bly and May Blossom.

Gelding Mare in Harness—First and third, Bridgford Farms, on Eunice and unnamed; second, C. E. Bunn, on Ovilta 10620.

Stallion in Harness—First and third, C. E. Bunn, on Prince Patton 17205 and Best of All 17200; second and fourth, Bridgford Farms, on Sensational Larigot and unnamed.

Pair of Ponies in Harness—First, C. E. Bunn, on Prince Patton 17205, and Quapho 14346; second, Bridgford Farms; third, Mrs. Adam Stirling, on Blackbird and mate; fourth, C. E. Bunn, on Princess Charming and Best of All.

Four-in-Hand—First, C. E. Bunn; second Bridgford Farms; third, Welty Shetland Pony Farm; fourth, Mrs. Adam Stirling.

Tandem Team—First, C. E. Bunn, on Prince Patton and Quapho; second and third, Bridgford Farms; fourth, Welty Shetland Pony Farm.

Pony Under Saddle—First, Mrs. Adam Stirling on Florence W; second, Welty Shetland Pony Farm; third, C. E. Bunn, on Patricia; fourth, Bridgford Farms.

Four Colts, Get of One Sire—First and Second, C. E. Bunn; third Bridgford Farms; fourth, Welty Shetland Pony Farm.

Five Animals Bred by Exhibitor—First and third, C. E. Dunn; second, Bridgford Farms; fourth, Welty Shetland Pony Farm.

Champion Stallion, Mare or Gelding in Harness—C. E. Bunn on Prince Patton.

Pony in Harness, Iowa Special—First, Welty Shetland Pony Farm; second, Mrs. Adam Stirling.

Pony Under Saddle—1st and 4th, Welty Shetland Pony Farm; 2d, Hugh Hall, on Topsy; 3d, Mrs. Adam Stirling, on Florence W.

Pair Ponies in Harness—1st and 2d, Welty Shetland Pony Farm; 3d, Mrs. Adam Stirling, on Black Bird and mate.

Iowa mules at the 1917 Iowa State Fair. Prize Teams owned by Wyatt Carr, Collins, Iowa.

HACKNEY PONIES AND OTHERS.

Exhibitors: Frank Briedson, Bayard, Iowa; A. L. Champlin, Ames, Iowa; Oakland Stable, Oskaloosa, Iowa; Mrs. Adam Stirling, Des Moines, Iowa; C. R. Wells & Bruce Robinson, Washington, Iowa.

Stallion Three Years Old or Over—1st, C. E. Bunn, on Delight; 2d, Mrs. Adam Stirling, on Imported Lammermoor King, 1859; 3d, Truman's Pioneer Stud Farm, on Huneston Tom Tit, 1895 (12671).

Mare Three Years Old or Over—1st, C. E. Bunn, on Tissington.

Pony in Harness—1st and 2d, C E. Bunn, on Delight and Tissington; 3d, Mrs. Adam Stirling on Imported Lammermoor King, 1859.

Pony Under Saddle—1st, Wells & Robinson, on Duke, 58615; 2d, Oakland Stable, on Pretty Baby.

Tandem Team—1st and 2d, C. E. Bunn, on Delight and Umpire, and Tissington and Brown Bell.

Four-in-Hand—1st, C. E. Bunn.

Pair Ponies in Harness—1st and 2d, C. E. Bunn, on Tissington and Brown Bell, and Delight and Umpire

MULES AND JACKS.

Exhibitors: Wyatt Carr, Collins, Iowa; Neild Bros., Ogden, Iowa.

Mule Four Years Old or Over—1st, 2d and 3d, Wyatt Carr, on Topsy, Molly and McConnell.

Mule Over Three, Under Four—1st, 2d and 3d, Wyatt Carr.

Mule Over Two, Under Three—1st, 2d and 3d, Wyatt Carr.

Mule Over One, Under Two—1st and 2d, Wyatt Carr.

Mule Colt Under One Year—1st and 2d, Wyatt Carr.

Pair Mules Over 2,400 Pounds, to be Shown in Harness—1st, 2d and 3d, Wyatt Carr.

Pair Mules Under 2,400 Pounds, to be Shown in Harness—1st and 2d, Wyatt Carr.

Five Mules, Any Age—1st, 2d and 3d, Wyatt Carr.

Champion Mule, Any Age—Wyatt Carr on Topsy. Reserve—Wyatt Carr.

Champion Pair Mules, Any Age—Wyatt Carr. Reserve—Wyatt Carr.

Four-Mule Team—1st, Wyatt Carr.

Jack Three Years Old or Over—1st, Wyatt Carr; 2d and 3d, Neild Bros.

Jack Two Years, Under Three—1st, Wyatt Carr.

Grand Display, Five Jacks—1st, Neild Bros.

Champion Jack, Any Age—Wyatt Carr, on McHannibal.

CATTLE DEPARTMENT.

SUPERINTENDENT.................................H. L. PIKE, Whiting

SHORTHORNS.

Exhibitors: W. C. Anderson, Norwalk, Iowa; A. J. Andrews, Melbourne, Iowa; Anoka Farms, Waukesha, Wis.; Bellows Bros., Maryville, Mo.; G. H. Burge, Mt. Vernon, Iowa; Carpenter & Carpenter, Baraboo, Wis.; Claverburn Farm, Colo, Iowa; F. H. Ehlers, Tama, Iowa; Claus Ehlert, Bennett, Iowa; W. F. Graham & Sons, Prairie City, Iowa; Wm. Herkelman, Elwood, Iowa; Homewood Stock Farm, Carroll, Iowa; D. A. Joy, Blakesburg, Iowa; Eben E. Jones, Rockland, Wis.; Owen Kane, Wisner, Neb.; J. E. Kennedy, Janesville, Wis.; C. W. Kirtley & Son, Bagley, Iowa; C. L. McClellan, Lowden, Iowa; J. W. McDermott, Kahoka, Mo.; Theo Martin, Bellevue, Iowa; Maasdam & Wheeler, Fairfield, Iowa; Jos. Miller & Sons, Granger, Mo.; S. A. Nelson & Sons, Malcolm, Neb.; C. A. Oldsen, Wall Lake, Iowa; J. F. Prather, Williamsville, Ill.; H. Pritchard & Son, Walnut, Iowa; Rapp Bros., St. Edward, Neb.; R. Rees & Sons, Pilger, Neb.; Rookwood Farm, Ames, Iowa; Earl Sparboe, Ellsworth, Iowa; Frank Toyne & Son, Lanesboro, Iowa; Uppermill Farm, Wapello, Iowa; Fred C. Wiley Mt. Union, Iowa.

JUDGE....................WILLIAM HARTNETT, North Muskogee, Okla.

Bull Three Years or Over—1st, Wm. Herkelman, on Cumberland Standard, 403027; 2d, Frank Toyne & Son, on East Lawn's Champion, 419060; 3d, J. E. Kennedy, on Maxwalton Amateur, 414027; 4th, Carpenter & Carpenter, on Imp. Lord Cullen, 425335; 5th, Theo Martin, on Woodlawn Villager, 409698; 6th, C. W. Kirtley & Son, on Homewood Marshall, 429525.

Bull Two Years and Under Three—1st, H. Rees & Sons, on Violet's Dale, 424602; 2d, Bellows Bros., on Parkdale Rex, 424166; 3d, Rookwood Farm, on Night Avon 3d, 438984; 4th, Rapp Bros., on Thaxton Masters, 421980; 5th, W. C. Anderson, on Irvinedale Ideal, 104365.

Bull, Senior Yearling—1st, Uppermill Farm, on Villager's Coronet, 176743; 2d, Jos. Miller & Sons, on Dale Cumberland, 487928; 3d, W. D. Graham & Sons, on Royal Victor, 458136; 4th, S. A. Nelson & Sons, on Nelson's Type, 511095; 5th, D. A. Jay, on Orangeman; 6th, Carpenter & Carpenter, on Collynie Cullen 2d, 472725; 7th, Homewood Stock Farm, on Wayward Marshal, 472985; 8th, Frank Toyne & Son, on Silver Dale, 475723.

Bull, Junior Yearling—1st, Bellows Bros., on King Baron, 49053; 2d, J. W. McDermott, on Cumberland Marshall 4th, 495896; 3d, Owen Kane, on Proud Dale; 4th and 5th, Rapp Bros., on Omega Secret, 564904, and Pride's Renown 526418; 6th, Eben E. Jones, on Collynie Cumberland, 488836; 7th, Uppermill Farm, on Imp. Marksman, (195803); 8th, C. A. Olson, on Imp. Hall Mark; 9th, H. Rees & Sons, on Ruberta Goods Model, 562990.

Bull, Senior Calf—1st and 2d, Anoka Farms, on Anoka Champion, 555857, and Mary Stamp, 555855; 3d, J. W. McDermott, on Cumberland Marshall 5th; 4th, Bellows Bros., on Supreme Choice, 555628; 5th, Uppermill Farm, on Villager's Cardinal, 556784; 6th, Jos. Miller & Son, on Superior Cumberland, 568936; 7th, J. E. Prather, on Village President, 565226; 8th, S. A. Nelson & Sons on Lovely Knight; 9th, Anoka Farms, on Royal Stamp, 555856.

Bull, Junior Calf—1st, H. Pritchard & Son, on Dale Discount, 583934; 2d, Frank Toyne & Son, on Eastlawn's Champion Junior, 576165; 3d, Anoka Farms, on Rosebud Champion, 576046; 4th, Bellows Bros., on Parkdale Emblem, 576170; 5th, Jos. Miller & Son, on Cumberland's Choice, 576192; 6th, J. W. McDermott, on Cumberland Gift; 7th, Theodore Martin, on Cumberland's Pride; 8th, Jos. Miller & Son, on Oakdale's Choice, 576193; 9th, Claverburn Farm, on Orange Stamp Second, 576266.

Cow Three Years or Over—1st, Carpenter & Carpenter, on Maxwalton Queen, 127524; 2d and 3d, Frank Toyne & Son, on Bonnybell 14th, 180802, and Village Lassie 2d, 127925; 4th, J. E. Kennedy, on Baroness Lady 2d; 5th, Uppermill Farm, on Cuckoo Beauty, 172503; 6th, C. W. Kirtley & Son, on Choice Dearie, 182622; 7th, H. Rees & Sons, on Susie Goods, 109098; 8th, Eben E. Jones, on Verbena of Oakdale, 149617; 9th, Theodore Martin, on Roan Julip.

Heifer Two Years and Under Three—1st, Bellows Bros., on Brandsby's Jinny 19th; 2d, H. Rees & Sons, on Lady Violet 8th, 199786; 3d, W. C. Anderson, on Roan Louise, 489924; 4th, Frank Toyne & Son, on Lovely Goods, 470506; 5th, Carpenter & Carpenter, on Collynie's Best, 199377; 6th, J. E. Kennedy, on Windsor Belle 23d Imp., 121802; 7th, Wm. Herkelman, on Village Venus 2d, 199757; 8th, Theodore Martin; 9th, Homewood Stock Farm, on Homewood Duchess, 205947.

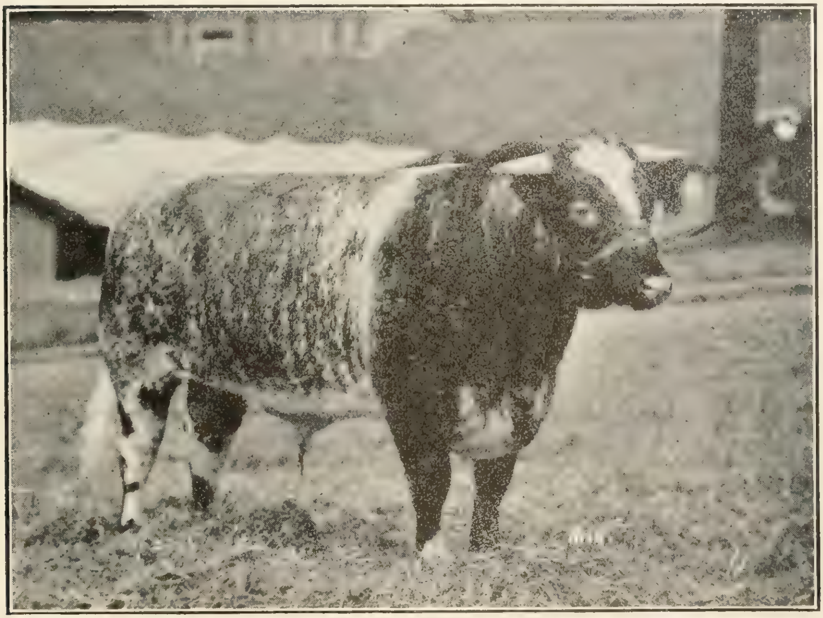
Heifer, Senior Yearling—1st, J. E. Kennedy, on Miss Lovely, 506941; 2d, J. F. Prather, on Village Blossom 8th, 472916; 3d, Carpenter & Carpenter, on Anoka Clipper 3d; 4th, S. A. Nelson, on Parkdale Gloster, 498483; 5th, Jos. Miller & Sons, on Village Mayflower, 471940; 6th, Wm. Herkelman, on Lady Sultan, 473298; 9th, Frank Toyne & Son, on Eastlawn's Baroness, 510234.

Heifer, Junior Yearling—1st, Jos. Miller & Sons, on Choice Mayflower, 497342; 2d and 3d, Bellows Bros., on Parkdale Victoria 8th, 495054, and Clara 70th, 471882; 4th, H. Pritchard & Son, on Victoria 73d, 543367; 5th, Uppermill Farm, on Villager's Graceful 2d, 476752; 6th, J. W. McDermott, on Ruberta Cumberland; 7th, Rapp Bros., on Butterfly Lady, 514698; 8th, H. Rees & Sons, on Cedar Lawn Lady, 497573; 9th, S. A. Nelson & Sons, on May Queen 2d.

Heifer, Senior Calf—1st and 2d, Bellows Bros., on Lovely of Parkdale 16th, 555631, and Beauty 36th; 3d, J. F. Prather, on Village Blossom 11th, 565229; 4th, Anoka Farms, on Fanny Anoka; 5th, Owen Kane, on Betty Dale 4th, 555624; 6th, Bellows Bros., on Lovely of Parkdale 15th, 555630; 7th, S. A. Nelson & Son, on Lady Augusta 9th; 8th, Anoka Farms, on Columbia Anoka, 555860; 9th, Theo Martin, on Village Rosemere, 560684.

Heifer, Junior Calf—1st, Owen Kane, on Rosewood Lady, 576314; 2d and 4th, Anoka Farms, on Augusta Anoka 5th, 576047, and Clipper Anoka 7th, 577142; 3d and 6th, Uppermill Farm, on Villager's Lassie, 576172, and Villager's Clara; 5th, H. Pritchard & Son, on Victoria 74th; 7th, Theo Martin, on Bampton Leaf, 575996; 8th, Maasdam & Wheeler, on Golden Bloom 3d, 575810; 9th, Wm. Herkelman, on Miss Evangeline 3d, 576306.

Champion Bull Two Years Old or Over—H. Rees & Sons, on Violet's Dale, 424602.



Junior Grand Champion bull at the 1917 Iowa State Fair. Owned by Uppermill Farm, Wapello, Iowa.

Champion Bull Under Two Years—Uppermill Farm, on Villager's Coronet, 476743.

Champion Cow Two Years Old or Over—Carpenter & Carpenter, on Maxwalton Queen, 127524.

Champion Heifer Under Two Years—Bellows Bros., on Lovely of Parkdale 16th, 555631.

Grand Champion Bull, Any Age—Uppermill Farm, on Villager's Coronet, 476743.

Grand Champion Cow or Heifer, Any Age—Carpenter & Carpenter, on Maxwalton Queen, 127524.

Graded Herd—1st, Bellows Bros.; 2d, H. Rees & Sons; 3d, J. E. Kennedy; 4th, Frank Toyne & Sons; 5th, Carpenter & Carpenter; 6th, Wm. Herkelman.

Breeder's Young Herd—1st, Bellows Bros.; 2d, Uppermill Farm; 3d, J. F. Prather; 4th, Jos. Miller & Son; 5th, Owen Kane; 6th, J. W. McDermott; 7th, Rapp Bros.; 8th, H. Rees & Sons.

Breeder's Calf Herd—1st, Bellows Bros.; 2d, Anoka Farms; 3d, J. F. Prather; 4th, Uppermill Farm; 5th, H. Pritchard & Son; 6th, Owen Kane; 7th, Jos. Miller & Sons; 8th, Maasdam & Wheeler.

Get of Sire—1st, Uppermill Farm; 2d, J. W. McDermott; 3d, Anoka Farms; 4th, Bellows Bros.; 5th, J. F. Prather; 6th, H. Pritchard & Son; 7th, H. Rees & Sons; 8th, Jos. Miller & Sons.

Produce of Cow—1st, Uppermill Farm; 2d, Carpenter & Carpenter; 3d, J. F. Prather; 4th, J. W. McDermott; 5th, Bellows Bros.; 6th, Wm. Herkelman; 7th, Frank Toyne & Son; 8th, Carpenter & Carpenter.

GRAND NATIONAL SHORTHORN BREEDERS' FUTURITY.

Bull Senior Calf—1st and 2d, Anoka Farms, on Anoka Stamp and Royal Stamp, 555856; 3d, J. W. McDermott, on Cumberland Marshall; 4th, Bellows Bros., on Supreme's Choice, 555628; 5th and 15th, Uppermill Farm, on Villager's Cardinal, 556784, and Villager's Admiral, 556783; 6th, Jos. Miller & Son, on Superior Cumberland, 568936; 7th, J. F. Prather, on Village President, 565226; 8th, Maasdam & Wheeler, on Marshall's Favorite, 567236; 9th, Carpenter & Carpenter, on Collynie Cullen; 10th, Wm. Herkelman, on True Goods, 558847; 11th, Theodore Martin, on Village Leader, 560683; 12th, H. Pritchard & Sons, on Dale Reliant, 543357; 13th, Rockwood Farm, on British Count 2d; 14th, Rockwood Farm, on Count Glary 2d.

Bull Junior Calf—1st, H. Pritchard & Son, on Dale's Discount, 583934; 2d, Frank Toyne & Son, on Eastlawn's Champion Junior, 576165; 3d, Anoka Farm, on Rosebud Champion, 576046; 4th Bellows Bros., on Parkdale Emblem, 576170; 5th, Joseph Miller & Sons, on Cumberland's Choice, 576192; 6th, J. W. McDermott, on Cumberland Gift, 575019; 7th, Theodore Martin, on Tulip's Pride, 575995; 8th, Joseph Miller & Son, on Oakdale's Choice, 576193; 9th, Claverburn Farm, on Orange Stamp 2d, 576266; 10th, Wm. Herkelman on Prince Cumberland, 576304.

Heifer Senior Calf—1st and 2d, Bellows Bros., on Lovely of Parkdale 16th, 558631, and Queen of Beauty 36th, 555634; J. F. Prather, on Village Prather 11th; 4th, Owen Kane, on Bettydale 4th, 555624; 5th, Bellows Bros., on Lovely of Parkdale 15th, 555630; 6th, Anoka Farms, on Columbia Anoka, 555860; 7th, Theo Martin, on Village Rosemary, 560684; 8th, Jos. Miller & Son, on Cumberland Flower 2d, 568938; 9th, H. Pritchard & Son, on Misie 3d, 543366; 10th, J. F. Prather, on Rosie Queen 6th, 565228; 11th, Uppermill Farm, on Villager's Maurine, 556786; 12th, Jos. Miller & Sons, on Cumberland Queen, 568937; 13th, Howell Rees & Sons, on Lady Ruberta, 562992; 14th, Eben E. Jones, on Hillshade Duchess, 558029; 15th, Frank Toyne, on Village Lassie 3d, 555206.

SPECIAL BY AMERICAN SHORTHORN BREEDERS' ASSOCIATION.

For best bull calf calved after September 1, 1916, bred and owned by exhibitor who has not previously exhibited Shorthorns at State Fair or National Show—Fred C. Wiley, on Villager's Admiral.

Best Heifer Calf—Claude Ehlert, on Diamond's Butterfly.

IOWA SPECIALS.

Bull Three Years Old or Over—1st, Wm. Herkelman, on Cumberland Standard, 403027; 2d, Frank Toyne & Son, on East Lawn's Champion, 419060; 3d, Theo Martin, on Woodlawn Villager, 409698; 4th, C. W. Kirtley & Son, on Homewood Marshall, 429525.

Bull Two Years and Under Three—1st, Rookwood Farm, on Knight Avon 3d, 438984; 2d, W. C. Anderson, on Irvindale Ideal, 104365.

Bull Senior Yearling—1st, Uppermill Farm, on Villager's Coronet, 476743; 2d, W. E. Graham & Sons, on Royal Victor, 458136; 3d, D. A. Joy, on Orangeman; 4th, Homewood Stock Farm, on Wayward Marshall, 472985; 5th, Frank Toyne & Son, on Silver Dale, 475723; 6th, Earl Sparboe, on Dale's Monarch, 513389.

Bull Junior Yearling—1st, Uppermill Farm, on Imported Marksman, (195803); 2d, C. A. Olson, on Imp. Inverness Hallmark, 530143; 3d, Wm. Herkelman, on Cumberland's Goods 2d, 495511; 4th, Frank Toyne & Sons, on Crescent Dale, 497579; 5th, C. L. McClelland, on Commodore Gainford, 578092; 6th, W. E. Graham & Sons, on Champion Chief, 548783.

Bull Senior Calf—1st, Uppermill Farm, on Villager's Cardinal, 556784; 2d, Maasdam & Wheeler, on Marshall's Favorite, 567236; 3d, Wm. Herkelman, on True Good, 558847; 4th, Theo Martin, on Village Leader, 560583; 5th, H. Pritchard, on Dale Reliance, 543357; 6th, Rookwood Farm on Count Glary 2d, 546340.

Bull Junior Calf—1st, H. Pritchard & Son, on Dale Viscount, 583934; 2d Frank Toyne & Son, on Eastlawn's Champion Junior, 576165; 3d, Theo Martin, on Tulip's Pride, 575995; 4th, Claverburn Farm, on Orange Stamp 2d; 5th, Theo Martin; 6th, Wm. Herkelman, on Prince Cumberland, 576304.

Cow Three Years or Over—1st and 2d, Frank Toyne & Son, on Bonnie Belle 14th, 180802, and Village Lassie 2d, 127925; 3d, Uppermill Farm, on Cuckoo Beauty, 172503; 4th, C. W. Kirtley & Son, on Choice Dairy, 182622; 5th, Theo Martin; 6th, Wm. Herkelman, on Colony Rosewood, 175045.

Heifer Two Years and Under Three—1st, Frank Toyne & Son, on Lovely Good, 470506; 2d, Wm. Herkelman, on Village Venus 2d, 199757; 3d, Theo Martin; 4th, Homewood Stock Farm, on Homewood Duchess, 205947; 5th, D. A. Jay, on Princess of Avondale, 200447; 6th, Frank Toyne & Son, on Cressie Bell 3d, 470505.

Heifer Senior Yearling—1st, Wm. Herkelman, on Gypsy Maid; 2d, Homewood Stock Farm, on Nonpareil Dona, 487684; 3d, Wm. Herkelman, on Lady Sultan, 473298; 4th, Frank Toyne & Son, on East Lawn Baroness, 510234; 5th, Maasdam & Wheeler, on Augusta Maid, 476599; 6th, F. H. Ehlers.

Heifer Junior Yearling—1st, H. Pritchard & Son, on Victoria 23d; 2d, Uppermill Farm, on Villager's Graceful 2d, 476752; 3d, Claverburn Farm, on Sunny Maid 10th, 557043; 4th, Uppermill Farm, on Villager's Graceful, 489525; 5th, Earl Sparboe, on Graceful Beauty, 513393; 6th, Wm. Herkelman, on Lady Cumberland, 495514.

Heifer Senior Calf—1st, Theo Martin, on Village Rosemary, 560684; 2d, H. Pritchard & Son, on Misie 3d, 543366; 3d, Uppermill Farm, on Villager's Maurine, 556786; 4th, Homewood Stock Farm, on Snow Flake; 5th, Claus Ehlert on Diamond's Butterfly, 566966; 6th, Uppermill Farm on Villager's Lavender, 576163.

Heifer Junior Calf—1st, Uppermill Farm, on Villager's Lassie, 576172; 2d, H. Pritchard & Son, on Victoria 74th; 3d, Uppermill Farm, on Villager's Clara 2d; 4th, Theo Martin, on Bampton Leaf, 575996; 5th, Maasdam & Wheeler, on Golden Bloom 3d, 575810; 6th, C. L. McClelland, on Bonnie Butterfly, 581803.

Graded Herd—1st, Frank Toyne & Son; 2d, Wm. Herkelman; 3d, Theo Martin.

Breeder's Young Herd—1st, Uppermill Farm; 2d, Wm. Herkelman; 3d, Frank Toyne & Son; 4th, Theo Martin; 5th, Maasdam & Wheeler; 6th, Homewood Stock Farm.

Breeder's Calf Herd—1st, Uppermill Farm; 2d, H. Pritchard & Son; 3d, Maasdam & Wheeler; 4th, Theo Martin; 5th, Frank Toyne & Son; 6th, C. L. McClelland.

Get of Sire—1st, Uppermill Farm; 2d, H. Pritchard & Son; 3d, Maasdam & Wheeler; 4th, Wm. Herkelman; 5th, C. L. McClelland; 6th, Homewood Stock Farm.

Produce of Cow—1st, Uppermill Farm; 2d, Wm. Herkelman; 3d, Frank Toyne & Son; 4th, Theodore Martin; 5th and 6th, Maasdam & Wheeler.

SPECIAL PREMIUMS OFFERED BY THE IOWA SHORTHORN BREEDERS' ASSOCIATION.

Best Senior Bull Calf—Uppermill Farm on Villager's Cardinal.

Best Junior Bull Calf—H. Pritchard & Son, on Dale Viscount.

Best Senior Heifer Calf—Theo Martin, on Village Rosemary.

Best Junior Heifer Calf—Uppermill Farm, on Villager's Lassie.

HEREFORDS.

Exhibitors: Wm. Andrews & Sons, Morse, Iowa; M. W. Beatty, Valley Junction, Iowa; J. H. Bereman, Aurora, Ill.; Biehl & Sidwell, Queen City, Mo.; E. M. Cassady & Son, Whiting, Iowa; Jesse Engle & Sons, Sheridan, Mo.; LaVernet Stock Farm, Jackson, Miss.; D. C. Maytag, Laurel, Iowa; Carl Miller, Belvue, Kan.; F. W. Schnoor, Perry, Iowa; L. J. Smith, Kansas City, Mo.; E. H. Taylor, Jr., Prop. Hereford Farms, Frankfort, Ky.; H. P. Tonsfeldt, Remsen, Iowa; W. L. Yost, Kansas City, Mo.; Enochs & Worthman, Jackson, Miss.

JUDGE.................................W. H. ROE, Shelbyville, Ky.

Bull Three Years or Over—1st, W. L. Yost, on Ardmore, 566000; 2d, Enoch & Worthman; 3d, Henry Schnoor, on Admiration, 482334; 4th, E. C. Maytag; 5th, H. P. Tonsfeldt, on Ito's Perfection, 440675.

Bull Two Years and Under Three—1st, E. H. Taylor, Jr., on Beau Rosemont, 600652; 2d, J. H. Bereman, on Perfect Donald 2d, 484082; 3d, W. L. Yost, on Woodbird 1st, 500001; 4th, E. H. Taylor, Jr., on Fairfax Knight, 510431; 5th, Carl Miller, on Laredo Boy; 6th and 7th, LaVernet Stock Farm, on Vernet Prince 31st, 494961, and Vernet Prince 36th, 504473; 8th, Carl Miller, on Larry, 523106.

Bull, Senior Yearling—1st, E. H. Taylor, Jr., on Roehampton 19th, 537961; 2d and 4th, W. L. Yost, on Fairfax 3d, 553962, and Duke Real 8th, 545726; 5th, Wm. Andrews & Sons, on Bonnie Brae 104th, 536778.

Bull, Junior Yearling—1st, E. H. Taylor, Jr., on Woodford 9th, 559720; 2d, W. L. Yost, on Arran More, 634000; 3d, Jesse Engle & Sons, on Beau Blanchard 33d, 565357; 4th and 7th, Carl Miller, on Echo Lad 16th, 584277, and Mischief Mixer 7th, 590252; 8th, Enoch & Worthman; 9th, J. H. Bereman, on Parader Perfection, 594156; 10th, H. P. Tonsfeldt, on Meadow Lord 2d, 631814.

Bull, Senior Calf—1st and 5th, Jesse Engle & Sons, on Beau Blanchard 53d, 623114, and Beau Blanchard 52d, 623113; 2d and 4th, E. H. Taylor, Jr., on Premier 4th, 609667, and Premier Gaston, 609672; 3d and 6th, J. H. Bereman, on Don Disturber, 621441, and Albany Columbus, 594157; 7th, Biehl & Sidwell, on Earl Disturber, 611628; 8th, Wm. Andrews & Sons, on Bonnie Brae 3d, 613817; 9th, LaVernet Stock Farm, on King Vernet 2d, 611385; 10th, Biehl & Sidwell, on Anabell's Disturber, 611625.

Bull, Junior Calf—1st, E. H. Taylor, Jr., on Woodford 16th, 630122; 2d, W. L. Yost, on Beau Champion, 616108; 3d and 4th, Biehl & Sidwell, on Neal Disturber, 619038, and Billie Disturber, 619031; 5th, LaVernet Stock Farm, on Vernet Prince 57th, 630757; 6th, Carl Miller, on Echo Lad.

Cow Three Years or Over—1st, E. H. Taylor, Jr., on Clive Iris 3d, 545495; 2d, E. H. Taylor, Jr., on Matron Donald, 449302; 3d, W. L. Yost, on Dorothy Donald 6th, 460621; 4th, Enochs & Worthman; 5th, LaVernet Stock Farm, on Maple's Lass 38th, 459775; 6th, J. B. Bereman, on Dolly Fairfax, 574551; 7th, B. C. Maytag, on Bangle 10th, 547758; 8th, Henry Schnoor, on Britoness, 463275; 9th, H. T. Tonsfeldt, on Amy, 385264.

Heifer Two Years and Under Three—1st and 3d, E. H. Taylor, Jr., on Woodford 17th; 4th, LaVernet Stock Farm, on Vernet Princess 36th, 504483; 7th, L. J. Smith, on Lassie 12th, 512887; 8th, W. A. Yost, on Bell Perfection 56th, 526788; 9th, H. P. Tonsfeldt, on Gladys, 599872.

Heifer Senior Yearling—1st and 5th, W. L. Yost, on Dorothy Hampton 23d, 537954, and Bonnie Doris, 548959; 2d, LaVernet Stock Farm, on Vernet Princess 38th, 548294; 3d, E. H. Taylor, Jr., on Bell Woodford 17th, 544371; 4th, LaVernet Stock Farm, on Princess 33d; 6th, E. H. Taylor, Jr., on Majestic Lady, 544377; 7th, Enochs & Worthman; 8th, Carl Miller, on Laredo Lass, 560296; 9th, L. J. Smith, on Goldie 3d, 570645.

Heifer, Junior Yearling—1st, E. H. Taylor, Jr., on Belle Woodford 8th, 559710; 2d, J. H. Bereman, on Columbia March On, 543883; 3d, Wm. Andrews & Sons, on Miss Brae 83d, 559951; 4th, J. H. Bereman, on Prime Lass Columbus, 543894; 5th, W. L. Yost, on Bonnie Princess, 549191; 6th, Jesse Engle & Sons, on Belle Blanchard 26th, 565373; 7th, Jesse Engle & Sons, on Belle Blanchard 31st, 598462; 8th, Carl Miller, on Echo Lass 12th, 574038; 9th, Jesse Engle & Sons, on Belle Blanchard 32d, 623117; 10th, L. J. Smith, on Daisy Dimple 570642.

Senior Heifer Calf—1st, 2d and 3d, E. H. Taylor, Jr., on Princess H., 609673, Princess T. and Princess T. 6th, 609679; 4th and 5th, W. L. Yost, on Bonnie Madeline, 616128, and Bonnie Easter, 616123; 6th, 7th and 9th, Jesse Engle & Sons, on Belle Blanchard 61st, 623129, Belle Blanchard 43d, 623126; 8th, J. H. Bereman, on Disturber's Fairy, 628744; 10th, Carl Miller, on Echo Lass 128th, 636703.

Junior Heifer Calf—1st, W. L. Yost, on Bonnie Augusta, 616116; 2d, Carl A. Rosenfield; 2d and 3d, E. H. Taylor, Jr., on Madam Donald 2d, 630108, and Gay Lassie, 630102; 4th, Jesse Engle & Sons, on Beau Blanchard 49th; 5th and 9th, J. H. Bereman, on Begonia Wilton, 621432, and Verna Disturber 2d, 621455; 6th and 7th, LaVernet Stock Farm, on LaVernet Belle 9th, 630746, and Princess Comfort 2d, 630758; 8th, Biehl & Sidwell, on Belle Disturber, 619030; 9th, Carl Miller, on Echo Lass 71st.

Champion Bull Two Years Old or Over—E. H. Taylor, Jr., on Beau Rosemont, 600652.

Champion Bull Under Two Years Old—E. H. Taylor, Jr., on Woodford 9th, 559720.

Grand Champion Bull—E. H. Taylor, on Woodford 9th, 559720.

Champion Cow Two Years or Over—E. H. Taylor, Jr., on Matron Donald, 449302.

Champion Heifer Under Two Years—W. L. Yost, on Dorothy Hampton 23d, 537954.

Grand Champion Cow—E. H. Taylor, Jr., on Matron Donald, 449302.

Graded Herd—1st, E. H. Taylor; 2d, W. L. Yost; 3d, Enoch & Worthman; 4th, LaVernet Stock Farms; 5th, J. H. Bereman.

Breeder's Young Herd—1st, E. H. Taylor, Jr.; 2d, W. L. Yost; 3d, LaVernet Stock Farm; 4th, Jesse Engle & Sons; 5th, Wm. Andrews & Sons; 6th, Hal J. Smith; 7th, Enochs & Worthman; 8th, Carl Miller.

Breeder's Calf Herd—1st, E. H. Taylor, Jr.; 2d, W. L. Yost; 3d, Jesse Engle & Sons; 4th, Biehl & Sidwell; 5th, LaVernet Stock Farm; 6th, Jesse Engle & Sons; 7th, Wm. Andrews & Sons; 8th, J. H. Bereman.

Get of Sire—1st, W. L. Yost; 2d, E. H. Taylor, Jr.; 3d, Jesse Engle & Sons; 4th, LaVernet Stock Farm; 5th, Biehl & Sidwell; 6th, Enochs & Worthman; 7th, Jesse Engle & Sons; 8th, Wm. Andrews & Sons.

Produce of Cow—1st, E. H. Taylor, Jr.; 2d, W. L. Yost; 3d and 4th, Jesse Engle & Sons; 5th, J. H. Bereman; 6th, L. J. Smith; 7th, Wm. Andrews.

IOWA SPECIALS.

Bull Three Years or Over—1st, Henry Schnoor, on Admiration, 482334; 2d, D. C. Maytag; 3d, H. P. Tonsfeldt, on Ito's Perfection, 440675.

Bull Senior Yearling—1st, Wm. Andrews & Sons, on Bonnie Brae 104th, 536778.

Bull Junior Yearling—1st, Wm. Andrews & Sons, on Bonnie Brae 101st, 559947; 2d, H. P. Tonsfeldt, on Meadow Lord 2d, 631814.

Bull Senior Calf—1st, Wm. Andrews & Sons, on Bonnie Brae 3d, 613817; 2d, H. P. Tonsfeldt, on Improver's Pride, 609893; 3d, M. W. Beatty, on Distribution, 617620.

Cow Three Years or Over—1st, D. C. Maytag, on Bangle; 2d, Henry Schnoor, on Britoness, 463275; 3d, H. P. Tonsfeldt, on Amy, 385264.

Heifer Two Years, Under Three—H. P. Tonsfeldt, on Gladys, 599872.

Heifer Junior Yearling—1st and 2d, Wm. Andrews & Sons, on Miss Brae 83d, 559951, and Miss Brae 82d, 559950; 3d and 4th, H. P. Tonsfeldt, on Grove Success, 582399, and Alice 2d, 631813.

Heifer Senior Calf—1st and 2d, Wm. Andrews & Sons, on Miss Brae 89th, 613824, and Miss Brae 87th, 613822.

Breeder's Young Herd—Wm. Andrews & Sons.

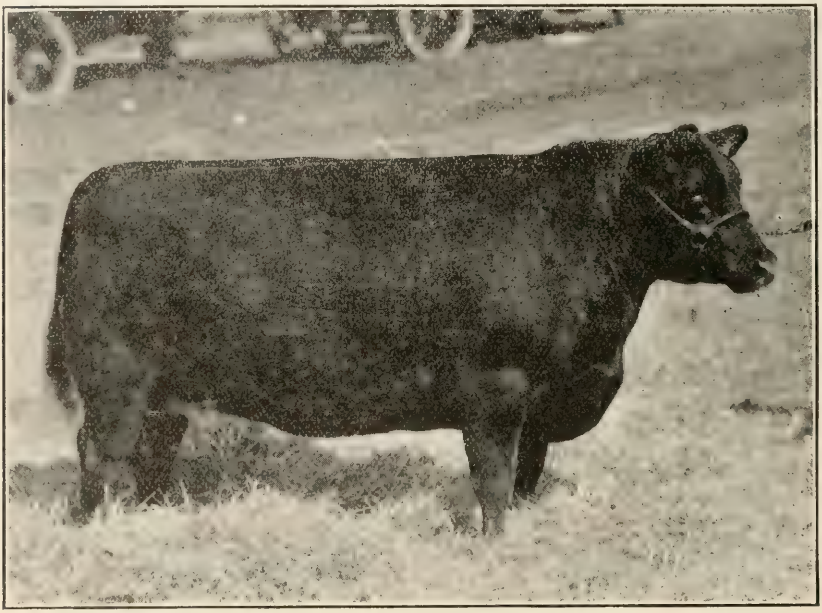
Breeder's Calf Herd, Get of Sire and Produce of Cow—Wm. Andrews & Sons.

ABERDEEN ANGUS.

Exhibitors: C. D. and E. F. Caldwell, Burlington Junction, Mo.; Congdon & Battles, North Yakima, Wash.; Escher & Ryan, Irwin, Iowa; John H. Fitch, Lake City, Iowa; Miles Gardner, Hamlin, Iowa; L. R. Kershaw, Muskogee, Okla.; Carl A. Rosenfeld, Kelley, Iowa; W. B. Seeley, Mt. Pleasant, Iowa.

JUDGE........................KENNETH MCGREGOR, Brandon, Canada

Bull Three Years or Over—1st, C. D. and E. L. Caldwell, on Black Cap Bertram, 193787; 2d, Congdon & Battles, on Knight of Rosemere, 185073; 3d, L. R. Kershaw, on Black Copper of Leaside, 175360; 4th, W. V. Seeley, on Ebony Dale 3d, 142360.



Junior Champion cow and first prize yearling at the 1917 Iowa State Fair. Owned by Escher & Ryan Botna, Iowa

Bull Two Years and Under Three—1st and 6th, Congdon & Battles, on Meraman of Tierra Alta, 206566, and Cherokeer, 199906; 2d, Carl A. Rosenfeld, on Erotas of Glen Carnock, 226519; 3d, C. D. and E. F. Caldwell, on Blatant, 217605; 4th, L. R. Kershaw, on Inverne of Rosemere, 199903; 5th, John Fitch, on Berber, 211859.

Bull Senior Yearling—1st and 2d, Escher & Ryan, on Blackcap Poe, 205921, and Enlate, 209477; 3d, John H. Fitch, on Karo F., 211876; 4th, Congdon & Battles, on Knight of Rosemere 2d, 217741; 5th, L. R. Kershaw, on Phelemon Pride.

Junior Yearling Bull—1st Congdon & Battles, on Quality Lad of Rosemere 3d, 217746; 2d, Miles Gardner, on Brounell's Champion, 231187; 3d and 4th, Escher & Ryan, on Proud Irwin 2d, 216316.

Senior Bull Calf—1st and 2d, C. D. and E. F. Caldwell; 3d and 4th, Escher & Ryan, on Black Marshall 2d, 289845, and Bar Marshall, 229185; 5th, Congdon & Battles, on Yakima Prince, 238371; 6th and 7th, J. H. Fitch, on Quito K, 228600, and Berman, 228594.

Junior Bull Calf—1st, C. D. and E. F. Caldwell; 2d, Congdon & Battles, on Yakima Black 4th, 238378; 3d, Escher & Ryan, on Black Erwin E, 229852; 4th and 5th, L. R. Kershaw, on Ben Hur 2d of Lone Dell, 232878, and Muskogee 29th, 244288.

Cow Three Years or Over—1st, 4th and 5th, C. D. and E. F. Caldwell, on Queen Millie of S. D. 3d, 189150; Pride of Autumn, 180854, and Esthonia 12th, 185723; 2d, Escher & Ryan, on Erica McHenry 39th, 183801; 3d, Congdon & Battles, on Quissy of Meadowbrook, 145235; 6th, L. R. Kershaw, on Twin Bum Pride 5th, 185015; 7th, John H. Fitch, on Blackbird Vena, 194127.

Cow Two Years or Over—1st and 3d, Congdon & Battles, on Kensington Lady E., 198294, and Pride of Rosemere 9th, 200741; 2d, C. D. and E. F. Caldwell, on Blackbird Velvet, 219751; 4th, John H. Fitch, on Kassa, 194138; 5th, L. R. Kershaw, on Blackbird 185th, 202594.

Heifer Senior Yearling—1st and 3d, Escher & Ryan, on Blackbird Gift 13th, 219522, and Blue Blood Lady 7th, 214680; 3d, C. D. and E. F. Caldwell, on Esthonia; 4th, J. R. Kersaw, on Muskogee Rose 2d, 219239; 5th, John H. Fitch, on Keziah, 211879.

Junior Yearling Heifer—1st, Congdon & Battles, on Queen of Rosemere 5th, 217747; 2d, C. D. and E. F. Caldwell, on Blackcap Echo 3d, 319755; 3d, 4th and 5th, Escher & Ryan, on Blackbird Missie 10th, 225561; Erica McHenry 64th, 229167, and Coquette McHenry 40th, 229174; 6th, L. R. Kershaw, on Muskogee Dona 3d, 219243; 7th, Congdon & Battles, on Blackbird Rosemere 23d, 217743.

Senior Heifer Calf—1st, 4th, 6th and 7th, Escher & Ryan, on Blackcap McHenry 151st, 229186, Barbara McHenry 34th, 229192, Erica McHenry 59th, 229198, and Erica Marie, 233054; 2d, C. D. and E. F. Caldwell; 3d, Carl A. Rosenfeld, on Enamma 4th, 228045; 5th, Congdon & Battles, on Pride of Rosemere 20th, 240911.

Junior Heifer Calf—1st, C. D. and E. F. Caldwell, on Betty Barbara; 2d, Escher & Ryan, on Blackbird Missie 15th, 229850; 3d, C. D. and E. F. Caldwell, on Eritus 5th; 4th, Congdon & Battles, on Barbara of Rosemere, 238368; 5th, L. R. Kershaw, on Muskogee Dona 4th, 244290; 6th, Miles Gardner, on Barbara Brounell.

Champion Bull Two Years or Over—C. D. and E. F. Caldwell, on Blackcap Bertram, 183787.

Champion Bull Under Two Years—Congdon & Battles, on Gallant Lad of Rosemere 3d.

Champion Cow Two Years or Over—C. D. and E. F. Caldwell, on Queen Millie of S. D. 3d, 189150.

Champion Heifer Under Two Years—Escher & Ryan on Blackbird's Gift 13th, 219522.

Grand Champion Bull, Any Age—C. D. and E. F. Caldwell, on Blackcap Bertram, 183787.

Grand Champion Cow or Heifer, Any Age—C. D. and E. F. Caldwell, on Queen Millie of S. D. 3d, 189150.

Graded Herd—1st, C. D. and E. F. Caldwell; 2d, Congdon & Battles; 3d, L. R. Kershaw; 4th, John H. Fitch.

Breeder's Young Herd—1st, Escher & Ryan; 2d, C. D. and E. F. Caldwell; 3d, Congdon & Battles; 4th, John H. Fitch; 5th, L. R. Kershaw.

Breeder's Calf Herd—1st and 4th, C. D. and E. F. Caldwell; 2d, Escher & Ryan; 3d, Congdon & Battles; 5th, John H. Fitch; 6th, L. R. Kershaw.

Get of Sire—1st, Congdon & Battles; 2d and 4th, C. D. and E. F. Caldwell; 3d, Escher & Ryan; 5th, L. R. Kershaw.

Produce of Cow—1st and 4th, Escher & Ryan; 2d and 5th, Congdon & Battles; 3d, C. D. and E. F. Caldwell; 6th, John H. Fitch; 7th, L. R. Kershaw.

GALLOWAY.

Exhibitor: H. and G. Croft, Bluff City, Kan.

JUDGE..................................PROF. W. H. PEW, Ames, Iowa

All awards won by the above exhibitor.

POLLED DURHAMS.

Exhibitors: Achenbach Bros., Washington, Kan.; Albert Hultine, Saronville, Neb.

JUDGE................................I. W. VAN NATTA, Fowler, Ind.

Bull Two Years, Under Three—Albert Hultine, on Roselawn Marshal, 12328.

Bull, Senior Yearling—1st and 3d, Achenbach Bros., on Sunny Sultan, 13857, and Intensified Sultan, 13856; 2d, Albert Hultine, on Royal Goods, 13732.

Bull, Junior Yearling—Albert Hultine, on Double Goods, 13733.

Bull, Senior Calf—1st and 2d, Albert Hultine, on Christmas Goods, 15514, and Orange Bud 4th, 15511.

Bull, Junior Calf—Albert Hultine, on Gloster Goods.

Cow Three Years or Over—1st and 3d, Achenbach Bros., on Sultana, Vol. 6, and Minute 3d, Vol. 6; 2d, Albert Hultine, on Winsome, Vol. 6.

Heifer Two Years, Under Three—1st, Albert Hultine, on Siren 2d, Vol. 6; 2d, Achenbach Bros., on Sultana Frances, Vol. 6.

Heifer, Senior Yearling—1st and 3d, Achenbach Bros., on Fatima, Vol. 7, and Sultana Felice, Vol. 7; 2d, Albert Hultine, on Gloster Princess 21st, Vol. 7.

Heifer, Junior Yearling—1st, Albert Hultine, on Select Fern, Vol. 7; 2d, 3d and 4th, Achenbach Bros., on Sultana Thankful, Vol. 7.

Heifer, Senior Calf—1st and 2d, Albert Hultine, on Gloster Countess 2d, 795, and Barmpton Sultana 3d, Vol. 7, 792; 3d, Achenbach Bros., on Minute 5th.

Heifer, Junior Calf—Achenbach Bros., on New Year's Gift.

Champion Bull Two Years or Over—Albert Hultine, on Roselawn Marshal, 12328.

Champion Bull Under Two Years—Achenbach Bros., on Sunny Sultan, 13857.

Champion Cow Two Years or Over—Achenbach Bros., on Sultana, Vol. 6.

Champion Heifer Under Two Years—Achenbach Bros., on Fatima, Vol. 7.

Grand Champion Bull, Any Age—Albert Hultine, on Roselawn Marshal, 12328.

Grand Champion Cow or Heifer, Any Age—Achenbach Bros., on Sultana, Vol. 6.

Graded Herd—Albert Hultine.

Breeder's Young Herd—1st, Achenbach Bros.; 2d, Albert Hultine.

Breeder's Calf Herd—Albert Hultine.

Get of Sire—1st and 3d, Achenbach Bros.; 2d, Albert Hultine.

Produce of Cow—1st, Achenbach Bros.; 2d, Albert Hultine.

RED POLLED.

Exhibitors: Clous & Travis, Manson, Iowa; W. S. Hill, Alexandria, S. D.; J. W. Larabee, Earlville, Ill.

JUDGE................................ELLIOTT DAVIS, Lincoln, Neb.

Bull Three Years or Over—J. W. Larabee, on Teddy's Charmer, 23100.

Bull Two Years, Under Three—J. W. Larabee, on Billy Charmer, 27865.

Bull, Senior Yearling—W. S. Hill, on Irving, 28947.

Bull, Junior Yearling—1st, J. W. Larabee, on Homer, 29806; 2d, W. S. Hill, on Lewis, 31398.

Bull, Senior Calf—1st and 2d, W. S. Hill, on Benjamin, 31408, and Major, 31410; 3d, Clous & Travis, on Master; 4th and 5th, J. W. Larabee, on St. Louis, 32294.

Bull Junior Calf—1st, J. W. Larabee, on Antone Charmer, 32299; 2d and 3d, Clous & Travis, on Ruben and Saucy Boy; 4th, W. S. Hill, on Buttercup's Perfection.

Cow Three Years or Over—1st, W. S. Hill, on Constance, 26672; 2d and 4th, J. W. Larabee, on Jello, 39431, and Red Rose, 39352; 3d, Clous & Travis, on Rozell, 36378.

Heifer Two Years, Under Three—1st and 4th, J. W. Larabee, on Lady Charmer, 42297, and Miss Charmer, 41482; 2d and 3d, W. S. Hill, on Ferne, 40532, and Rue, 42745.

Heifer, Senior Yearling—1st, J. W. Larabee, on Bessie Charmer, 43707; 2d and 3d, W. S. Hill, on Brownie, 42764, and Penelope, 42754.

Heifer, Junior Yearling—1st and 2d, J. W. Larabee, on Graceful Charmer, 43713, and Tidy, 43710; 3d, W. S. Hill, on Clover, 45726.

Heifer, Senior Calf—1st, J. W. Larabee, on Effie Charmer, 46688; 2d, W. S. Hill, on Maggie 2d, 45744.

Heifer, Junior Calf—1st, W. S. Hill, on Cecelia; 2d and 4th, Clous & Travis, on Brooksy and Dora; 3d, J. W. Larabee, on Maxine, 46692.

Champion Bull Under Two Years—J. W. Larabee, on Homer, 29806.

Champion Cow Two Years or Over—W. S. Hill, on Constant, 26672.

Champion Heifer Under Two Years—J. W. Larabee, on Bessie Charmer, 43707.

Grand Champion Bull—J. W. Larabee, on Teddy's Charmer, 23100.

Grand Champion Cow—W. S. Hill, on Constant, 26672.

Graded Herd—1st and 3d, J. W. Larabee; 2d, W. S. Hill.

Breeder's Young Herd—1st, J. W. Larabee; 2d, W. S. Hill.

Breeder's Calf Herd—1st, J. W. Larabee; 2d, Clous & Travis; 3d, W. S. Hill.

Get of Sire—1st and 5th, J. W. Larabee; 2d and 4th, W. S. Hill; 3d, Clous & Travis.

Produce of Cow—1st, 3d and 4th—J. W. Larabee; 2d and 5th, W. S. Hill.

HOLSTEIN.

Exhibitors: Chas. E. Baker, Mingo, Iowa; J. H. Cleverly, Maxwell, Iowa; S. S. Culver, Stillwater, Minn.; Hargrove & Arnold, Norwalk, Iowa; Mayowood Farms, Rochester, Minn.; Messer Farms Co., Waterloo, Iowa; Paul Peters, Ankeny, Iowa; H. O. Larson, Dike, Iowa.

JUDGE.........................PROF. H. H. KILDEE, St. Paul, Minn.

Bull Three Years or Over—1st, S. S. Culver, on Piebe Laura Ollie Homestead King, 110474; 2d, Messer Farms Co., on King Segis Johanna Ormsby, 163801; 3d, Mayowood Farms, on Johanna Ondine Grahamholm Lad, 125049; 4th, H. O. Larson, on Leda Fobes Korndyke Prince, 105332; 5th, Hargrove & Arnold, on Sir Inka Imperial Pontiac, 123428.

Bull Two Years and Under Three—1st, Messer Farms Co., on King Segis Pontiac Combination 5th, 171791; 2d, S. S. Culver, on Far Oaks Sir Ormsby Johanna, 173867.

Bull One Year and Under Two—Messer Farms Co., on Korndyke Pontiac Ormsby, 171611; 2d, Mayowood Farms, on King Aggie De Kol Grahamholm Lad, 190446; 3d, Messer Farms Co., on King Segis Ormsby Nudine, 185963.

Bull, Senior Calf—1st, Hargrove & Arnold, on Oak Dale Spring De Kol, 209832; 2d, Mayowood Farms, on Mercedes Ondine Jewel, 207738; 3d, Messer Farms Co., on Segis Lad Pontiac Korndyke, 212500; Mayowood Farms, on Johanna Glenda Lad, 208304; 5th, S. S. Culver, on Far Oaks Sir Star Ormsby, 200489.

Bull Junior Calf—1st, Wm. Galloway and Messer Farms Co., on Prince Korndyke Segis Ormsby, 208830; 2d, Messer Farms Co., on Prince Banger Ormsby, 208831; 3d and 4th, S. S. Culver, on Far Oaks Sir Violet Ormsby and Far Oaks Sir Ormsby Champion; 5th, H. O. Larsen, on Sir Hartog Johanna.

Cow Four Years or Over—1st, S. S. Culver, on Spring Brook Darkness, 158681; 2d, Messer Farms Co., on Jewel Walker Gerben, of Cedarside, 214099; 3d, H. O. Larsen, on Drooky Sadie Vale Cornucopia, 120084; 4th and 5th, Hargrove & Arnold, on Williams Farm Flossie De Kol, 110597, and Dulcie's Princess Jewel, 106031.

Cow Three Years and Under Four—1st, H. O. Larsen, on Bracelet Clothilde Korndyke, 256478; 2d, Messer Farms Co., on Aggie Gerben Netherland, 256632; 3d and 4th, Hargrave & Arnold, on Oakdale Lady Clothilde, 274064, and Irma Myra Lyons, 265161; 5th, Paul Peters, on Jessie Wayne 4th, 257228.

Heifer Two Years, Under Three—1st and 3d, Messer Farms Co., on Nellie Segis Pontiac, 281918, and Eudora Pontiac Colantha, 271452; 2d, Hargrove & Arnold, on Rose De Kol Wayne; 4th and 5th, S. S. Culver, on South Side Inka De Kol 2d, 371566, and Far Oaks Ideal Ormsby, 309832.

Heifer Senior Yearling—1st, Messer Farms Co., on Jewel Walker Segis Pontiac, 305494; 2d, S. S. Culver, on Far Oaks Skylark Ormsby, 309836; 3d, Mayowood Farms, on Johanna Ondine Soo, 331375; 4th and 5th, H. O. Larsen, on Forum Jessie Alcartra, 361097, and Forum Hartog Rauwerd, 361098.

Heifer, Junior Yearling—1st,. H. O. Larsen, on Forum Aggie De Kol, 361096; 2d, Mayowood Farms, on Johanna Woodcrest Ruth, 331376; 3d and 5th, S. S. Culver, on Far Oaks Lilly Ormsby, 360918, and Far Oaks Harriett Ormsby, 360919; 4th, Messer Farms Co., on Eudora Maid Pontiac Ormsby, 333358.

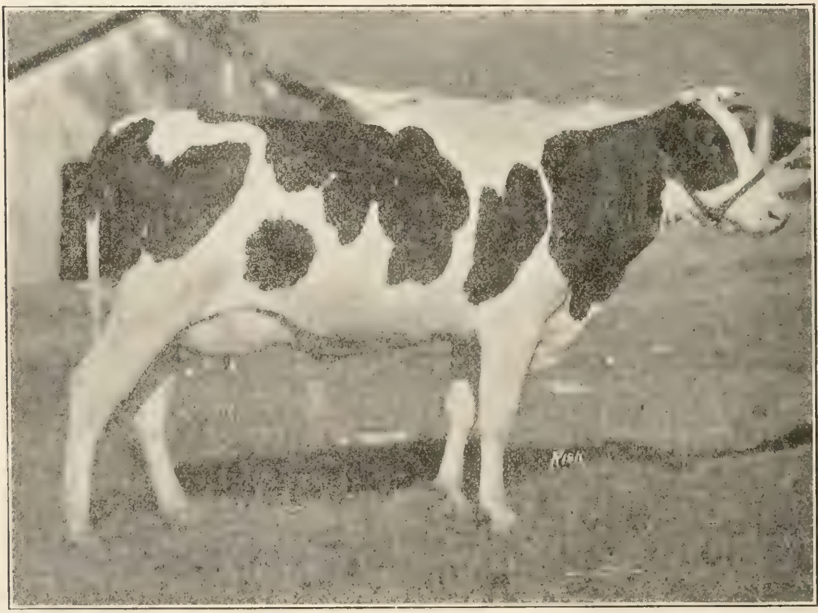
Heifer, Senior Calf—1st, Mayowood Farms, on Johanna Tritomia Mercedes, 356866; 2d, Messer Farms Co., on Larkey De Kol Pontiac; 3d, Hargrove & Arnold, on Kirby Martha Girl, 383993; 4th, S. S. Culver, on Far Oaks Miss Ormsby Rue, 360921; 5th, H. O. Larsen, on Forum Aggie De Kol.

Heifer, Junior Calf—1st, 4th and 5th, S. S. Culver, on Belagge Wayne Rag Apple Kind, 383468, Far Oaks Maudlene Ormsby, and Far Oaks Pauline Ormsby; 2d, Hargrove & Arnold, on Rose King Mutual, 375542; 3d, Messer Farms Co., on Miss Johanna Segis Korndyke, 377685.

Champion Bull Two Years or Over—S. S. Culver, on Piebe Laural Olive Homestead King, 110474.

Champion Bull Under Two Years—Hargrove & Arnold, on Oakdale's Spring De Kol, 209832.

Champion Cow Two Years or Over—Messer Farms Co., on Nellie Segis Pontiac, 281918.



Grand Champion Holstein cow at the 1917 Iowa State Fair. Owned by Messer Farms Co., Waterloo, Iowa.

Champion Heifer Under Two Years—S. S. Culver, on Pelagie Wayne Rag Apple Kind, 383468.

Grand Champion Bull, Any Age—S. S. Culver, on Piebe Laura Olive Homestead King, 110474.

Grand Champion Cow or Heifer, Any Age—Messer Farm Co., on Nellie Segis Pontiac, 281918.

Breeder's Young Herd—1st, Messer Farms Co.; 2d, Mayowood Farms; 3d, H. O. Larsen; 4th, S. S. Culver; 5th, Hargrove & Arnold.

Breeder's Calf Herd—1st, Messer Farms Co.; 2d, Hargrove & Arnold; 3d, S. S. Culver; 4th, H. O. Larsen.

Get of Sire—1st, Messer Farms Co.; 2d, Mayowood Farms; 3d, Messer Farms Co.; 4th, H. O. Larsen; 5th, S. S. Culver.

Produce of Cow—1st and 3d, Messer Farms Co.; 2d, H. O. Larsen; 4th, Mayowood Farms; 5th, S. S. Culver.

Premier Exhibitor—Messer Farms Co.

Premier Breeder—Messer Farms Co.

JERSEY.

Exhibitors: R. S. Butler, Des Moines, Iowa; W. S. Dixson & Son, Brandon, Wis.; Nelle Fabyan, Geneva, Ill.; Longview Farm, Lees Summit, Mo.; Chas. A. Peterson, Rosendale, Wis.; Hal. C. Young, Lincoln, Neb.

JUDGE............................PROF. H. H. KILDEE, St. Paul, Minn.

Bull Three Years or Over—1st, Longview Farm, on Viola's Majesty's White Sox, 122005; 2d, H. C. Young, on Stockwell's Champion, 115854; 3d, W. S. Dixson & Son, on Sultana's Oxford Rosette, 116751.

Bull Two Years, Under Three—1st, Nelle Fabyan, on Combination's Premier Junior; 2d, Longview Farm, on Warder's Chieftain, 141412; 3d, Chas. A. Peterson, on Ibsen's Chief, 135749.

Bull One Year, Under Two—1st and 2d, Longview Farm, on Poet's White Heart, 144615, and Hope's Financial Raleigh, 147894; 3d, Chas. A. Peterson, on Marguerite's Jolly King, 141158; 4th, R. S. Butler, on Financial Noble Owl, 149375; Hal. C. Young, on Double Interest 9th, 148784.

Bull, Senior Calf—1st, Longview Farm, on Chief Raleigh, 151522; 2d, W. S. Dixson & Son, on Gauntlet's Oxford Togo, 148097; 3d and 4th, Chas. A. Peterson, on Sultana's Noble Oxford, 147341, and Chief Beauvoir, 153701; 5th, Longview Farm, on Jolly Snowstorm, 151521.

Bull, Junior Calf—1st, Longview Farm, on Emily's Poet Oxford; 2d, Hal. C. Young, on Oxford's Duke of W., 154348; 3d, Chas. A. Peterson, on Western King's Glory Lad, 153705; 4th, Longview Farm, on Raleigh's Foxy Majesty, 151913.

Cow Four Years or Over—1st and 2d, Longview Farm, on Golden Fern Silver and Fairy Lad's Wolf, 219492; 3d and 5th, H. C. Young, on Toronos Iris, 275101, and Jamont's Beauty Girl, 248600; 4th, W. S. Dixson & Son, on Oxford Una's Lass, 234543.

Cow Three Years, Under Four—1st and 3d, Longview Farm, on Undulata Nena, 306820, and Raleigh's Eminent Buttercup, 302111; 2d and 5th, H. C. Young, on Queen, and Campanile's Queen, 342906; 4th, Chas. A. Peterson, on Page Farm Flora, 310092.

Heifer Two Years, Under Three—1st, Longview Farm, on Fontaine's Pretty Maiden, 361535; 2d, W. S. Dixson & Son, on Cowship's Brightness, 382354; 3d, Chas. A. Peterson, on Glory's Pearline, 341679; 4th and 5th, H. C. Young, on Rosebud of Glendale, 354582, and Raleigh's Frolic, 342909.

Heifer, Senior Yearling—1st, W. S. Dixson & Son, on Oxford Togo Beauty, 361882; 2d and 3d, Longview Farm, on Raleigh's Young Fontaine, 380670, and Raleigh's Etta Pogis, 362235; 5th, Chas. A. Peterson, on Oxford Glory Lavern, 359712.

Heifer, Junior Yearling—1st, W. S. Dixson & Son, on Oxford Majesty Maid, 352000; 2d and 4th, Longview Farm, on Fontaine's Nema, 385436, and Gay Lady Raleigh, 385437; 3d, Chas. A. Peterson, on Glory's Oxford Bell, 359713; 5th, Hal. C. Young, on Raleigh's Girl of W., 362236.

Heifer, Senior Calf—1st, W. S. Dixson & Son, on Oxford Togo Jolly, 372067; 2d and 3d, Longview Farms, on My Rosary, and Fontaine's Em, 381699; 4th and 5th, Chas. A. Peterson, on Chief's Glory Laverne, 386227.

Heifer, Junior Calf—1st, Longview Farm, on Raleigh's Oxtivity; 2d, W. S. Dixson, on May's Oxford Majesty, 396487; 3d, Longview Farm, on Raleigh's Velvet, 381700; 4th, Hal. C. Young, on Jolly Columbine, 377317; 5th, Chas. A. Peterson, on Harbinger's Belle, 386230.

Bull, Senior Champion—Longview Farm, on Viola's Majesty White Sox, 122005.

Bull, Junior Champion—Longview Farm, on Poet's White Heart, 144615.

Grand Champion Bull—Longview Farm, on Viola's Majesty's White Sox, 122005.

Champion Cow Two Years or Over—Longview Farm, on Golden Fern Silver Thread, 360879.

Champion Heifer Under Two Years—W. S. Dixson & Son, on Oxford Majesty Maid, 352000.

Grand Champion Cow—Longview Farm, on Golden Fern Silver Thread, 360879.

Graded Herd—1st, Longview Farm; 2d, Hal. C. Young; 3d, W. S. Dixson & Son; 4th, Chas. A. Peterson.

Breeder's Young Herd—1st, W. S. Dixson & Son; 2d and 3d, Longview Farm; 4th, Hal. C. Young.

Breeder's Calf Herd—1st, Longview Farm; 2d, W. S. Dixson & Son; 3d, Hal. C. Young.

Get of Sire—1st and 3d, Longview Farm; 2d, W. S. Dixson; 4th, Chas. A. Peterson; 5th, Hal. C. Young.

Produce of Cow—1st, 2d and 4th, Longview Farm; 3d, W. S. Dixson & Son; 5th, Chas. A. Peterson.

Premier Exhibitor—Longview Farm.

Premier Breeder—Longview Farm.

GUERNSEYS.

Exhibitors: Dairyland Farm, Storm Lake, Iowa; Rookwood Farm, Ames, Iowa.

JUDGE................................H. G. VANPELT, Waterloo, Iowa

Bull Two Years, Under Three—Dairyland Farm, on Royal of Waveland.

Bull One Year, Under Two—Dairyland Farm, on College Stars.

Bull, Senior Calf—1st, Rookwood Farm, on Rookwood Cherub; 2d, Dairyland Farm.

Bull, Junior Calf—Dairyland Farm, on Primrose's Holden.

Cow Four Years or Over—Dairyland Farm, on Imported Herirel's Betty, 33138.

Heifer Two Years, Under Three—Dairyland Farm, on Belle Princess, 62385.

Heifer, Senior Yearling—Dairyland Farm, on Princess of Ames.

Heifer, Senior Calf—Dairyland Farm, on Dairyland's Pride.

Heifer, Junior Calf—1st and 2d, Dairyland Beauty, and Dairyland Bessie.

Champion Bull, Two Years or Over—Dairyland Farm, on Regal of Waveland, 32193.

Champion Cow, Two Years or Over—Dairyland Farm, on Imported Herirel's Beauty, 33138.

Champion Heifer, Under Two Years—Dairyland Farm, on Dairyland Beauty.

Junior and Grand Champion Bull—Rookwood Farms, on Rookwood Cherub.

Grand Champion Cow—Dairyland Farm, on Imported Herirel's Beauty, 33138.

Graded Herd—Dairyland Farms.

Get of Sire and Produce of Cow—Dairyland Farm.

Premier Exhibitor—Dairyland Farm.

Premier Breeder—Rookwood Farm.

AYRSHIRES.

Exhibitors: Ferndell Farms, Ladysmith, Wis.; Wm. Galloway, Waterloo, Iowa; Adam Seitz, Waukesha, Wis

JUDGE..................................WILL FORBES, Waterloo, Iowa

Bull, Three Years or Over—1st, Wm. Galloway, on Auchenbrain Good Gift, 15487; 2d, Ferndale Farms, on Ferndale Victor, 16369.

Bull Two Years, Under Three—1st, Adam Seitz, on Cavalier's Lord Roseberry, 17956; 2d, Wm. Galloway, on Cavalier's Merry Lad, 17957.

Bull One Year, Under Two—1st, Adam Seitz, on Cavalier's Lord Stewart, 18967; 2d, 3d, 4th and 5th, Ferndell Farms, on Ferdell's Credit, 18836, Ferndell's Arrogance, 18838, Ferndell's Trust, and Ferndell's Loyalty, 18839.

Bull, Senior Calf—1st, Adam Seitz, on Cavalier's Beuchan Lindsay; 2d and 4th, Wm. Galloway, on Lucius Good Gift, 19313, and Carl Peter Pan, 19536; 3d and 5th, Ferndell Farms, on Ferndell's Sultan, 20142, and Ferndell's Just Right, 20141.

Bull, Junior Calf—1st and 5th, Adam Seitz, on Cavalier's Rising Archer, and Cavalier's Beuchan Silver Tips; 2d, Wm. Galloway, on Sir Douglas Peter Pan, 19538; 3d and 4th, Ferndell Farms, on Ferndell's Scotchman, and Ferndell's Three of a Kind, 20143.

Cow Four Years or Over—1st, 2d and 9th, Adam Seitz, on Imp. Old Hall Beauty 8th, 28153; Imp. Hill House Maud, 32799, and unnamed; 4th and 5th, Ferndell Farms, on May of Hillcroft, 25056, and Anabell of Pine Lane, 23023.

Cow Three Years, Under Four—1st and 3d, Adam Seitz, on Cavalier's Cream Puff, 37673, and Imp. Black Byre's Lady Walker, 48568; 2d, Ferndell Farms, on Silver Pet of Ferndell, 39133.

Heifer Two Years, Under Three—1st, Wm. Galloway, on Nona Spencer, 39923; 2d and 4th, Adam Seitz, on Cavalier's Maud 2d, and Cavalier's Lady Mary Stewart, 40679; 3d and 5th, Ferndell Farms, on Ferndell's Felicity, 43286, and Ferndell's Hope, 45296.

Senior Yearling Heifers—1st and 2d, Wm. Galloway, on Good Gift's Nona, 41534, and Good Gift's Clemie, 41536.

Heifer, Junior Yearling—1st and 2d, Adam Seitz, on Cavalier's Kilnford Dorothy and Cavalier's Lady Bountiful, 43602; 3d and 4th, Ferndell Farms, on Ferndell's Mode, 43290, and Ferndell's Fidelity, 45301.

Heifer, Senior Calf—1st, 2d and 3d, Adam Seitz, on Cavalier's Kilnford Bell 3d, Cavalier's Beuchan Queen, and Cavalier's Lady White; 4th, Ferndell Farms, on Ferndell's Good Enough, 47052; 5th, Wm. Galloway, on Lady Ethel Good Gift, 46635.

Heifer, Junior Calf—1st, Adam Seitz, on Cavalier's Kilnford Lily; 2d, Ferndell Farms, on Ferndell's Lassy; 3d, 4th and 5th, Wm. Galloway, on Minnie Good Gift, 46636; Cherry Kilmarnock, 46637, and unnamed.

Senior Champion Bull—Adam Seitz, on Cavalier's Lord Stewart, 18967.

Grand Champion Bull—Adam Seitz, on Cavalier's Lord Stewart, 18967.

Champion Cow, Two Years or Over—Adam Seitz, on Imported Oldhall Beauty 8th, 28153.

Champion Heifer, Under Two Years—Wm. Galloway, on Good Gift's Nona, 41534.

Grand Champion Cow or Heifer, Any Age—Adam Seitz, on Imported Oldhall Beauty 8th, 28153.

Graded Herd—1st, Adam Seitz; 2d, Wm. Galloway; 3d, Ferndell Farms.

Breeder's Young Herd—1st, Adam Seitz; 2d, Wm. Galloway; 3d, Ferndell Farms.

Breeder's Calf Herd—1st, Adam Seitz; 2d, Ferndell Farms; 3d, Wm. Galloway.

Get of Sire—1st and 2d, Adam Seitz; 3d, Wm. Galloway; 4th, Ferndell Farms.

Produce of Cow—1st, 3d and 4th, Adam Seitz; 2d, Wm. Galloway; 5th and 6th, Ferndell Farms.

Premier Breeder—Adam Seitz.

Premier Exhibitor—Adam Seitz.

SPECIAL OFFERED BY THE AYRSHIRE BREEDERS' ASSOCIATION.

Exhibitor Winning Most Money on Single Animals Bred by Himself—Adam Seitz.

BROWN SWISS.

Exhibitors: Ira Inman, Beloit, Wis.; Hull Bros., Painesville, Ohio.

JUDGE.............................H. G. VANPELT, Waterloo, Iowa

Bull One Year, Under Two—Ira Inman, on Flora Duwire's Grandson, 5571.

Bull, Junior Calf—Ira Inman, on Lassie's Lot, 6113.

Cow Four Years or Over—Ira Inman, on Sara May, 5750.

Cow Three Years, Under Four—Ira Inman, on Esther Bun, 5151.

Heifer Two Years, Under Three—1st and 2d, Ira Inman, on Alice Martin, 7311, and Hilda's Butter Girl, 7387.

Heifer, Senior Yearling—Ira Inman, on Virginia K., 7573.

Heifer, Junior Yearling—Ira Inman, on Lady Trilby, 8257.

Heifer, Senior Calf—1st and 2d, Ira Inman, on Lottie Brown, 8767, and True Blue, 8766.

Heifer, Junior Calf—1st and 2d, Ira Inman, on May Maiden, 8769, and Lot's Alice, 8768.

Champion Bull Under Two Years—Ira Inman, on Jessie's Lot, 6112.

Champion Cow Two Years or Over—Ira Inman, on Esther Bun, 5151.

Champion Heifer Under Two Years—Ira Inman, on May Maiden, 8769.

Grand Champion Bull—Ira Inman, on Lot of Lakeview, 3950.

Grand Champion Female—Ira Inman, on Esther Bun, 5151.

Graded Herd, Breeder's Young Herd, Breeder's Calf Herd, Get of Sire, Produce of Cow, Premier Exhibitor, Premier Breeder and Special Prize Offered by Brown Swiss Cattle Breeders' Association for Get of Sire, Four Animals, Either Sex—Ira Inman.

FAT SHORTHORNS.

PURE BRED.

Steer, Spayed or Martin Heifer Two Years and Under Three—Wm. Herkelman, on Johnnie.

Steer, Spayed or Martin Heifer One Year and Under Two—1st, Arthur Barrow & Co.; 2d, Wm. Herkelman, on King Flato; 3d, Theo. Fricke, on Roan Lad.

Steer, Spayed or Martin Heifer Under One Year—Eben A. Jones, on Hill Shade Laddie.

Champion Steer, Spayed or Martin Heifer—Arthur Barrow & Co.

GRADE OR CROSS BRED.

Steer, Spayed or Martin Heifer Two Years and Under Three—1st, J. W. McDermott, on Roan Dick; 2d and 3d, Claverburn Farm, on Improver and Ben.

Steer, Spayed or Martin Heifer One Year and Under Two—1st, Clifford Tague; 2d, J. W. McDermott, on Buck; 3d, Claverburn Farm, on Bobbie.

Steer, Spayed or Martin Heifer Under One Year—1st, Neal J. Bixler on Mutt; 2d, Claverburn Farm, on Ole; 3d, Robert Fennell.

Champion Steer, Spayed or Martin Heifer—J. W. McDermott, on Roan Dick.

Group of Three Head Owned by Exhibitor—1st and 2d, Claverburn Farm.

FAT HEREFORDS.

PURE BRED.

Steer, Spayed or Martin Heifer Two Years and Under Three—E. M. Cassidy & Son, on Deacon.

Steer, Spayed or Martin Heifer One Year, Under Two—1st, E. H. Taylor, Jr., on Bondsman Boy; 2d, E. M. Cassidy & Son, on Ridge Boy, 541736; 3d, Luther Couser, on Tom; 4th, Roy Sandvick.

Steer, Spayed or Martin Heifer Under One Year—E. M. Cassidy & Son, on Bobbie Burns 2d, 609198.

Champion Steer, Spayed or Martin Heifer—E. H. Taylor, on Bondsman Boy, 525589.

Group of Three Head Owned by Exhibitor—E. M. Cassidy & Son.

GRADE OR CROSS BRED.

Steer, Spayed or Martin Heifer Two Years and Under Three—E. M. Cassidy & Son, on Jack.

Steer, Spayed or Martin Heifer One Year and Under Two—1st, Donald C. Hill, on High Creigies Pride; 2d, E. M. Cassidy & Son, on Burnie; 3d, Roy Longfellow; 4th, Tom Evans.

Steer, Spayed or Martin Heifer Under One Year—1st, W. L. Yost, on Liberty Bond; 2d, E. M. Cassidy & Son, on Ridgeway.

Champion Steer, Spayed or Martin Heifer—W. L. Yost, on Liberty Bond.

Group of Three Head Owned by Exhibitor—E. M. Cassidy & Son.

FAT ABERDEEN ANGUS.

PURE BRED.

Steer, Spayed or Martin Heifer Two Years and Under Three—1st, L. R. Kershaw, on Muskogee; 2d, W. B. Seeley, on Queen Lad, 1914 .

Steer, Spayed or Martin Heifer, One Year and Under Two—1st, C. D. and E. F. Caldwell, on Luckily; 2d, L. R. Kershaw, on Black Muskogee, 1959; 3d, Raymond McMillan, on Raymond, 1957.

Steer, Spayed or Martin Heifer Under One Year—1st, C. D. and E. F. Caldwell, on Kiahoga; 2d, L. R. Kershaw, on Muskogee Boy; 3d, Elmer McMillan, on Elmer, 1969.

Champion Steer, Spayed or Martin Heifer—C. D. and E. F. Caldwell, on Luckily, 1483.

Group of Three Head Owned by Exhibitor—L. R. Kershaw.

GRADE OR CROSS BRED.

Steer, Spayed or Martin Heifer One Year and Under Two—1st, Homer Towns, on Teddy; 2d, Howard Anderson; 3d, Richard Seiberling.

Steer, Spayed or Martin Heifer Under One Year—Congdon & Battles.

Champion Steer, Spayed or Martin Heifer—Congdon & Battles.

PURE BREDS, GRADES AND CROSS BREDS.

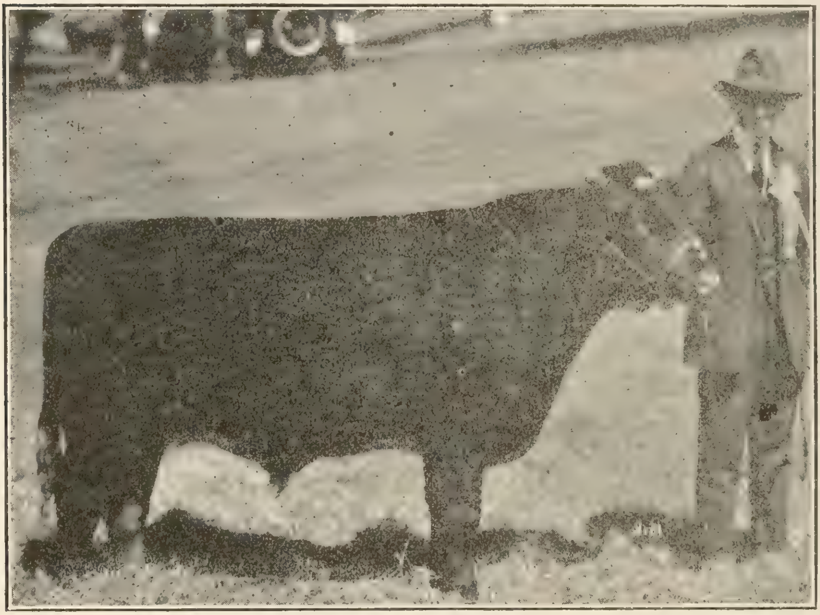
Steer, Spayed or Martin Heifer Two Years and Under Three—W. S. Hill, on Benedict.

Steer, Spayed or Martin Heifer One Year and Under Two—1st, W. S. Hill, on Madison; 2d, James Denny; 3d, John Fields, on Dick.

Champion Steer, Spayed or Martin Heifer—W. S. Hill, on Madison.

BABY BEEF FEEDING CONTEST.

Exhibitors: Irwin H. Amenson, Roland, Iowa; Howard Anderson, Ross, Iowa; Carl K. and Neal J. Bixler, Corning, Iowa; Albion A. Blinks, Marion, Iowa; Earl R. Buckland, Mapleton, Iowa; Wendell S. Clampitt, New Providence, Iowa; Howard D. Cox, Hubbard, Iowa; Luther Couser, Zearing, Iowa; James Denny, Rose Hill, Iowa; Francis Wayne Dew, Grundy Center, Iowa; Robert Fennell, Allerton, Iowa; John Fields, Paton, Iowa; Theodore Fricke, State Center, Iowa; Donald and Roland Geddis, Maxwell, Iowa; Walter F. Grimsby, New Hampton, Iowa; Clarke Hall, Mt. Pleasant, Iowa; George Hansman, Gilbert, Iowa; Walter Halstead, Ames, Iowa; George W. Halstead, Ames, Iowa; Kenneth Harbaugh, Jefferson, Iowa; Donald C. Hill, Corning, Iowa; James Horsey, Farmington, Iowa; Otis M. Jorstad, McCallsburg, Iowa; Wm. F. Kelley, Osceola, Iowa; Earl Kohl, Mechanicsville, Iowa; Arah Leonard, Dayton, Iowa; Harold Lobaugh, Nevada, Iowa; Roy Longfellow, Blockton, Iowa; Reuben Lundgren, Ft. Dodge, Iowa; Raymond McMillan, Mt. Pleasant, Iowa; Elmer McMillan, Mt. Pleasant, Iowa; Roger G. Mead, Mitchellville, Iowa; Roy Moon, New Providence, Iowa; Otis D. Rash, New Providence, Iowa; George Rettig, Spirit Lake, Iowa; George A. Rosenfeld, Kelley, Iowa; Richard Seiberling, Mitchellville, Iowa; Charles Strothman, Yarmouth, Iowa; Clifford Tague, Kirkman, Iowa; Homer Towns, Oskaloosa, Iowa; Jennie E. Turner, DeWitt, Iowa; Willie J. Turner, DeWitt, Iowa; Charles Warren, Gilbert, Iowa; Wayne Weisner, Granger, Iowa; Herbert Westphal, Wyoming, Iowa; Carl Young, Mt. Pleasant, Iowa; Tom Evans, Roscoe, Iowa; James Daughton, Leon, Iowa; Hazel and Weston Rush, West Burlington, Iowa; William and Esther Hener, West Burlington, Iowa; Arthur Barrow, Manilla, Iowa; Roy Sandvick, McCallsburg, Iowa; Roscoe Richardson, Cambridge, Iowa; Nielford Amenson, Roland, Iowa.



Champion Baby Beef at the 1917 Iowa State Fair. Owned, fed and exhibited by Clifford Tague, Kirkman, Iowa.

1st, Clifford Tague; 2d, Donald C. Hill; 3d, George A. Rosenfeld; 4th, Homer Towns; 5th, Howard Anderson; 6th, Raymond McMillan; 7th, Richard Seiberling; 8th, James Denny; 9th, Harold Lobaugh; 10th, Charles Strothman; 11th, Theodore Fricke; 12th and 13th, Earl Buckland; 14th, Elmer McMillan; 15th, Neal J. Bixler; 16th, Roy Longfellow; 17th, Tom Evans; 18th, Otis D. Rash; 19th, John Fields; 20th, George Hansman.

SWINE DEPARTMENT.

SUPERINTENDENT........................CYRUS A. TOW, Norway, Iowa

POLAND CHINA.

Exhibitors: Anderson Bros., West Liberty, Iowa; A. J. Banks, Montour, Iowa; R. R. Blake, Dallas Center, Iowa; John Blauer, Tingley, Iowa; C. H. Christianson, Story City, Iowa; J. H. Cope, Carlisle, Iowa; I. J. Conrad, Melbourne, Iowa; W. E. Conrad, Melbourne, Iowa; G. C. Cox, Lakonta, Iowa; M. A. Dowling, Reasnor, Iowa; S. L. Farlow, Ankeny, Iowa; J. F. Hook, Beacon, Iowa; W. C. Jack, Jr., West Liberty, Iowa; Lawrence A. Jensen and Peter Madsen, Tingley, Iowa; Joe Kramer, Elkader, Iowa; Wm. Lents, Ankeny, Iowa; Chas. E. Lyden, Manning, Iowa; B. F. Marmion, Farmington, Iowa; O. R. Mark, Adel, Iowa; G. F. Marshall & Sons, Monroe, Iowa; H. M. Menough, Grimes, Iowa; J. Cyrus Morton, Indianola, Iowa; Fred G. Reis, Indianola, Iowa; Merrill Sattherthwaite, Muscatine, Iowa; John Schmieder, Remsen, Iowa; A. D. Severe, Dows, Iowa; Fred Sievers, Audubon, Iowa; Mark I. Shaw, Monroe, Iowa; H. A. Tessman, Ross, Iowa; Peter J. Welch, Wellman, Iowa; W. L. Wiley, Menlo, Iowa; I. M. Reed, Oskaloosa, Iowa; B. F. Daisey & Sons, Versailles, Ill.; Carl Rosenfeld, Kelly, Iowa.

JUDGE................................W. L. McNUTT, Ord Nebraska

Aged Boar—First, Anderson Bros., on A's Mastodon, 235907; 2d, Fred Seivers, on King Jones, 262297; 3d, I. J. Conrad, on Big Bone's Jumbo, 246029; 4th, Peter J. Welch, on As a Wonder, 226467; 5th, A. D. Severe, on Golden Gate King, 223811; 6th, Carl A. Rosenfeld, on Big Emperor; 7tn, John Blauer, on Orange Bud, 237749.

Senior Yearling Boar—1st, R. R. Blake, on Half Tone Equal, 255337; 2d, Lawrence A. Jensen, on Big Tom, 85614.

Junior Yearling Boar—1st, R. W. Halford, on Jumbo's Last, 83695; 2d, Overton Bros., on Orphan's Big Joe, 262329; 3d, Joe Kramer, on K. A. Wonder, 279893; 4th, Henry J. Keil, on Black Wonder, 640432; 5th, C. H. Christianson; 6th, R. R. Blake, on Great Progress 2d, 282159; 7th, W. C. Jack and Son, on Jack's Giant Ben.

Senior Boar Pig—1st, John Schmeider, on Futurity Wonder, 279969; 2d, G. F. Marshall & Sons, on Futurity Wonder, 280161; 3d, Merrill Satterthwaite, on Muskie Jumbo, 279633; 4th, A. D. Severe, on Long Timm, 280519; 5th, H. Wade Gillis, on Joe Superior, 279477; 6th, M. A. Dowling, on Orange King, 279905; 7th, A. J. Banks.

Junior Boar Pig—1st, John Schmeider, on Great Chief, 279961; 2d, Anderson Bros.; 3d, Mark I. Shaw; 4th, R. W. Halford; 5th, John Schmeider, on Blue Model, 279963; 6th, Overton Bros.; 7th, I. J. Conrad, on Model Orange, 279685.

Aged Sow—1st, Jno. Schmeider; 2d, A. D. Severe, on Smooth Giantess, 531256; 3d, A. D. Severe, on Jones Maid, 578574; 4th, Overton Bros., on Miss Price 3d, 507728; 5th, C. H. Christianson, on Maud, 527616.

Senior Yearling Sow—1st, W. E. Conrad, on Lucy, 200899; 2d, C. H. Christianson, on Miss Long Jumbo, 624876; 3d, Overton Bros., on Big Knox Girl, 589186; 4th, J. F. Hook, on Daisy, 200757; 5th, Anderson Bros., on Mastodon Maid 2d, 621922.

Junior Yearling Sow—1st, W. E. Conrad, on Lucy Wonder, 200900; 2d, Overton Bros.; 3d, A. D. Severe, on Timms Long Lady, 644504; 4th, Joe Kramer, on Pride's Wonder; 5th, C. H. Christianson, on Blue Valley Jare 3d, 625986; 6th, Anderson Bros.; 7th, Joe Kramer, on Beautie's Wonder.

Senior Sow Pig—1st, M. A. Dowling, on Orange Dolly, 642934; 2d, R. W. Halford, on Bob's Giantess A, 201807; 3d, John Schmeider, on Futurity Girl, 643034; 4th, A. D. Severe, on Timm's Queen, 644510; 5th, Anderson Bros., on Miss Jumbo, 641408; 6th, A. D. Severe, on Lady Timm, 644508; 7th, G. F. Marshall & Sons, on Black Giantess, 643610.

Junior Sow Pig—1st, I. J. Conrad, on Orange Lady, 642408; 2d, I. J. Conrad, on Orange Lady 2d, 642410; 3d, Anderson Bros.; 4th, Anderson Bros.; 5th, M. A. Dowling, on Lady Orange 1st, 642930; 6th, John Schmeider, on Futurity Molly, 643030; 7th, Overton Bros.

Senior Champion Boar—Anderson Bros., on A's Mastadon.

Senior Champion Sow—W. E. Conrad, on Lucy, 200899.

Junior Champion Boar—John Schmeider, on Futurity Wonder.

Junior Champion Sow—M. A. Dowling, on Orange Dolly, 642934.

Grand Champion Boar, Any Age—Anderson Bros., on A's Mastadon.

Grand Champion Sow, Any Age—M. A. Dowling, on Orange Dolly, 642934.

Aged Herd Owned by Exhibitor— 1st, A. D. Severe; 2d, Overton Bros.; 3d, Joe Kramer.

Aged Herd Owned and Bred by Exhibitor—1st, Overton Bros.; 2d, Joe Kramer.

Young Herd Owned by Exhibitor—1st, John Schmeider; 2d, I. J. Conrad; 3d, Anderson Bros.; 4th, A. D. Severe; 5th, M. A. Dowling.

Young Herd Owned and Bred by Exhibitor—1st, John Schmeider; 2d, I. J. Conrad; 3d, Anderson Bros.; 4th, A. D. Severe; 5th, M. A. Dowling.

Get of Sire—1st, John Schmeider; 2d, I. J. Conrad; 3d, A. D. Severe; 4th, John Schmeider; 5th, Anderson Bros.; 6th, M. A. Dowling; 7th, Joe Kramer.

Produce of Dam—1st and 4th, John Schmeider; 2d, I. J. Conrad; 3d, Anderson Bros.; 5th, A. D. Severe; 6th, M. A. Dowling.

POLAND CHINA FUTURITY.

Senior Boar Pig—1st, John Schmeider, on Futurity Wonder, 279969; 2d, G. F. Marshall & Sons, on Futurity Wonder, 280161; 3d, Merrill Satterthwaite, on Wonder Superior 2d, 279629; 4th, A. D. Severe, on Smooth Timm, 280521; 5th, M. A. Dowling, on Orange King, 279905; 6th, A. J. Banks.

Senior Sow Pig—1st, M. A. Dowling, on Orange Dolly, 642934; 2d, John Schmeider, on Futurity Girl, 643034; 3d, A. D. Severe, on Timm's Queen, 644510; 4th, Anderson Bros., on Miss Jumbo, 641408; 5th, A. D. Severe, on Lady Timm, 644508; 6th, G. F. Marshall & Sons, on Black Giantess, 643610.

Junior Boar Pig—1st, John Schmeider, on Great Chief, 279961; 2d and 8th, Anderson Bros.; 3d, Mark I. Shaw; 4th, John Schmeider, on Blue Model, 279963; 5th, Overton Bros.; 6th, I. J. Conrad, on Model Orange, 279685; 7th, I. J. Conrad.

Junior Sow Pig—1st, I. J. Conrad, on Orange Lady, 642408; 2d, I. J. Conrad, on Orange Lady 2d, 642410; 3d and 4th, Anderson Bros.; 5th, M. A. Dowling, on Lady Orange 1st, 642930; 6th, John Schmeider, on Futurity Molly, 643030; 7th, Overton Bros.; 8th, Joe Kramer.

Litters of Four Junior Pigs—1st and 4th, I. J. Conrad; 2d, Anderson Bros.; 3d and 6th, John Schmeider; 5th, M. A. Dowling; 7th, Overton Bros.; 8th, Joe Kramer.

SPOTTED POLAND CHINAS.

Exhibitors: E. R. McKeffer & Sons, Ossian, Ind.; Shaver & Fry, Kalona, Iowa; R. G. Long, Arcadia, Ohio; J. W. Troy & Bros., Rose Hill, Iowa; Bock & Shirk, Kempton, Ind.; A. L. Booco, Jeffersonville, Ohio; Peter Welch, Wellman, Iowa.

JUDGE.................................N. H. GENTRY, Sedalia, Mo.

Aged Boar—1st, Bock & Shirk, on O. & K.'s Pride, 30; 2d, A. S. Booco, on Park Co. Choice, 1473; 3d, E. R. McKeffer & Sons, on McPride, 1746.

Senior Yearling Boar—1st, J. C. McClune, on McClune's Choice, 2941; 2d, J. W. Troy & Bros., on Michigan Boy 15th; 3d, A. S. Booco, on Bennie B, 6227.

Junior Yearling Boar—1st, A. S. Booco, on Sills Longfellow, 3891; 2d, J. W. Troy & Bros., on Jumbo Spot, 6163; 3d, Shaver & Fry, on Jeff, 3165.

Senior Boar Pig—1st, E. R. McKeefer & Sons, on Mc's Perfex, 6139; 2d, A. S. Booco, on Herbert's Pride, 6229; 3d, R. G. Long; 4th, Shaver & Fry, on Silver Eagle, 5279; 5th, J. W. Troy & Bros., on Proud Max, 6169; 6th, J. C. McClune, on Billy Bean Ind., 5447; 7th, Shaver & Fry.

Junior Boar Pig—1st, A. S. Booco, on Michigan Boy 31st, 6221; 2d, A. S. Booco, on Michigan Boy 33d, 6225; 3d and 4th, Bock & Shirk; 5th and 6th, J. C. McClune, 7th, J W. Troy & Bros., on Spotted Climax, 6167.

Aged Sow—1st, J. C. McClune, on Big Belle, 12914; 2d, A. S. Booco, on Highland Queen, 1721; 3d, Bock & Shirk, on Packers Model; 4th, J. C. McClune, on Miss Lotty, 16344; 5th, Bock & Shirk, on Queen Bess.

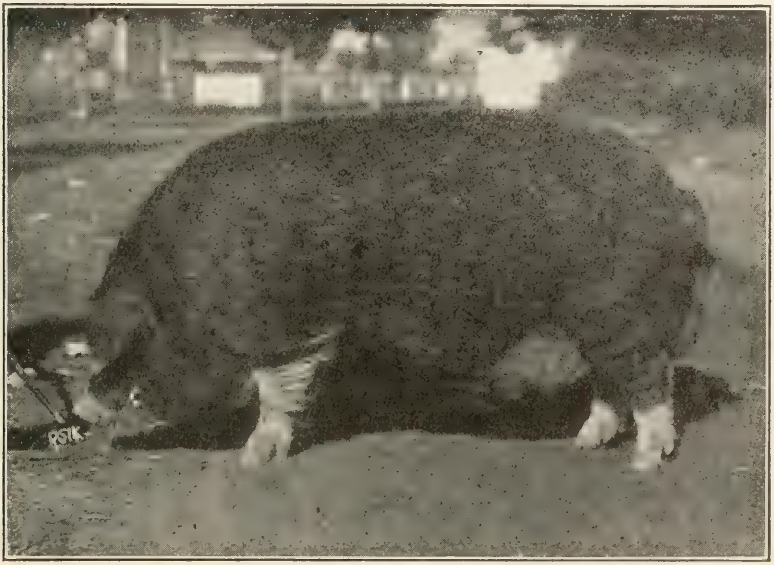
Senior Yearling Sow—1st, A. S. Booco on Lady Saverne, 16814; 2d, Bock & Shirk.

Junior Yearling Sow—1st, Bock & Shirk, on Perfection Soss 7th, 9696; 2d, A. S. Booco, on Lady Perfection 2d, 16810; 3d, J. C. McClune, on Iowa Countess, 12820; 4th, Bock & Shirk, on Beautiful Rose; 5th, A. S. Booco, on Lady Perfection, 16808; 6th, J. C. McClune on Lady Masie 1st, 14528.

Senior Sow Pig—1st, Bock & Shirk, on American Bill; 2d, A. S. Booco, on Perfect Sis 11th, 12542; 3d, Bock & Shirk; 4th, Shaver & Fry, on Obena 31st, 15738; 5th, A. S. Booco, on Perfect Sis 12th, 12544; 6th, J. C. McClune, on Rose H. 3d, 15852.

Junior Sow Pig—1st, A. S. Booco, on Lady Alice 2d, 16802; 2d and 4th, Bock & Shirk; 3d and 6th, J. C. McClune; 5th, A. S. Booco, on Lady Alice 4th, 16806; 7th, Shaver & Fry.

Senior Champion Boar—J. C. McClune, on McClune's Choice.



Grand Champion Poland China Boat at the 1917 Iowa State Fair.

Senior Champion Sow—Bock & Shirk, on Perfect Soss, 9696.

Junior Champion Boar—E. R. McKeefer & Sons, on Mc's Perfex.

Junior Champion Sow—Bock & Shirk, on American Bell.

Grand Champion Boar—E. R. McKeefer & Son, on McPerfex.

Grand Champion Sow—Bock & Shirk, on Perfection Soss 7th.

Aged Herd, Owned by Exhibitor—1st, J. C. McClune; 2d, Bock & Shirk; 3d, A. S. Booco.

Aged Herd, Owned and Bred by Exhibitor—A. S. Booco.

Young Herd, Owned by Exhibitor—1st, Bock & Shirk; 2d, E. R. McKeefer & Sons; 3d, Shaver & Fry; 4th, A. S. Booco; 5th, Bock & Shirk; 6th, J. C. McClune.

Young Herd, Owned and Bred by Exhibitor—1st and 3d, Bock & Shirk; 2d, A. S. Booco; 4th, Shaver & Fry; 5th, J. C. McClune.

Get of Sire—1st and 4th, Bock & Shirk; 2d, A. S. Booco; 3d, A. S. Booco; 5th, Shaver & Fry; 6th, E. R. McKeefer & Sons; 7th, J. C. McClune.

Produce of Dam—1st and 3d, Bock & Shirk; 2d, A. S. Booco; 4th, Shaver & Fry; 5th, E. R. McKeefer & Sons; 6th, J. C. McClune.

DUROC JERSEYS.

Exhibitors: F. E. Abbott, Menlow, Iowa; A. P. Alsin, Boone, Iowa; Fred Bonnesen, Kimballton, Iowa; F. B. Butterfield, Ankeny, Iowa; Jesse Butin, Reasnor, Iowa; J. W. Cartright, Burlington, Iowa; Carlson & Trier, Washington, Iowa; M. O. Cramer & Son, Monroe, Iowa; Frank N. Crow, Oxford, Iowa; T. M. Davis, West Branch, Iowa; Arthur Dearinger, Reasnor, Iowa; C. H. Eighmey, Waterloo, Iowa; John Fennema, Monroe, Iowa; J. S. Golden, Oakland, Iowa; James L. Harper, Ames, Iowa; E. L. Hollingsworth, West Branch, Iowa; W. A. Hooper, Runnells, Iowa; J. P. Jorgensen, Elkhorn, Iowa; S. C. Kellogg, Montour, Iowa; W. A. Kellogg, Montour, Iowa; Ed. M. Kern, Stanton, Neb.; Bodern Kern, Stanton, Neb.; John Krebs, Riverside, Iowa; J. K. Latta, Birmingham, Iowa; Lewis Lein, Roland, Iowa; Grant Lynn & Son, Spirit Lake, Iowa; H. A. McCaffree, Janesville, Iowa; R. G. McDuff, Monroe, Iowa; Peterson Bros., Story City, Iowa; C. M. Reed, Guthrie Center, Iowa; Thos. Robinson, Independence, Iowa; W. B. Shaw, Monroe, Iowa; J. C. Tallman, Monteith, Iowa; Chas. J. Shepard & A. H. Frens, Muscatine, Iowa; Madison Spencer, Audubon, Iowa; Urbanside Farm, Waterloo, Iowa; J. D. Waltemeyer & Son, Melbourne, Iowa; Grant White, Afton, Iowa; F. W. Year, Melvin, Iowa; C. A. Zellmer, Atlantic, Iowa; McNulty & Johns, Strasburg, Mo.; S. S. Templeton & Sons, Monroe, Iowa; J. F. Schoenholz & C. F. Swigle, Steward, Ill.

JUDGE..............................W. T. HARRIS, Morgansfield, Ky.

Aged Boar—1st, R. A. McDuff, on Grand Model 8th, 163999; 2d, J. S. Golder, on Critic's Protection, 189045; 3d, Carlson & Trier, on Premier Chief, 203143; 4th, C. A. Zellmer, on Future Fame 2d, 188963; 5th, G. A. Romey & Ed Gurtin, on Greater Iowa; 6th, R. F. Smylie, on Golden Model Booster, 73317; 7th, A. P. Alsin, on A. P.'s Disturber, 203231.

Senior Yearling Boar—1st, Baden & Kern, on Sensation Wonder 4th, 203591; 2d, Arthur Dearinger, on Graduate Violet Colo, 22769; 3d, Brookwater Farm, on King Cherry King, 84489A; 4th, Carlson & Trier, on Dutch Model, 201931; 5th, A. P. Alsin, on Illustrator Sidney, 205049; 6th, Dr. J. P. Jorgensen, on Grand Model 44th, 203579; 7th, H. A. McCaffree.

Junior Yearling Boar—1st, J. F. Schoenholz & C. G. Swegle; 2d, J. J. Cain, on Giant Invincible, 208823; 3d, Madison Spencer on Jack's Orion, 219017; 4th, Brookwater Farm, on Brookwater Demonstrator, 95555A; 5th, Ed. M. Kern, on King Sensation, 228727; 6th, Chas. J. Shepard & A. H. Frens, on Frens Model, 207723; 7th, J. S. Golder, on Critic, 214083.

Senior Boar Pig—1st, Thos. Robinson, on Grand Model's Equal, 229233; 2d. Ed M. Kern, on Grand Model I Am, 228849; 3d, R. B. Reynolds, on Pathfinder's Likeness, 220343; 4th, Carlson & Frier, on Great Model, 228925; 5th, J. W. Cartwright, on Chief Disturber 3d, 96565; 6th, Dr. J. R. Jorgenson, on Disturber Orion, 229353; 7th, Ed. M. Kern, on Sensation Wonder 5th, 230593.

Junior Boar Pig—1st, M. C. Cramer & Son, on Golden Giant, 229009; 2d, M. C Cramer & Son, on Long Crimson, 229007; 3d, Arthur Dearinger, on Redeemer Wonder; 4th, Dr. J. P. Jorgensen, on Grand Model's Choice, 229351; 5th, Arthur Dearinger, on Redeemer Wonder 2d; 3th, J. H. Latta, on Proud Master, 228963; 7th, D. F. Bloomfield.

Aged Sow—1st, Ed. M. Kern, on Sensational Girl; 2d, Baden & Kern, on Kern's Choice Lady, 511756; 3d, John Krebs, on Greenfield G. 20th, 455304; 4th, J. S. Golder, on Jumbo Jennie 2d, 495608; 5th, Dr. J. P. Jorgenson, on Wonder Model, 494214; 6th, J. S. Holder, on Jumbo Jennie 3d, 495610; 7th, Dr. J. P. Jorgenson, on Sensation Belle, 456288.

Senior Yearling Sow—1st, Ed. M Kern, on Sensation Lady 3d, 513592; 2d, Brookwater Farm, on Brookwater Protectioness, 214316A; 3d, J. D. Waltemeyer & Son, on Grand Lady 65th, 567776; 4th, Dr. J. P. Jorgenson, on Golden Pride, 547790; 5th, J. D. Waltemeyer & Son, on Grand Lady 72d, 567790; 6th, R. G. McDuff, on Big Fancy, 573250; 7th, Romey & Guertin, on P. as Perfection Queen, 528446.

Junior Yearling Sow—1st, Brookwater Farm, on Brookwater Red Bud 8th; 2d, J. D. Waltemeyer & Son, on Grand Lady 75th, 575526; 3d, J. D. Waltemeyer & Son, on Great Wonder Lady 3d, 575534; 4th, Brookwater Farm, on Br. Favorite II, 180078A; 5th, J. S. Golder, on Critic's Peach, 576444; 6th, J. S. Golder, on Critic's Gayety, 576442; 7th, Madison Spencer, on Sensation Girl.

Senior Sow Pig—1st, Brookwater Farm, on Brookwater Lass V; 2d, Baden & Kern, on Lady Sensation 2d, 578492; 3d, R. F. Smylie, on Golden Model Queen, 576864; 4th, J. D. Waltemeyer & Son, on Great Wonder Lady, 575118; 5th, Carlson & Trier, on Great Model Lady, 575406; 6th, John Krebs, on Silver Face 24th, 576624; 7th, C. A. Zellmer, on The Keyser, 228775.

Junior Sow Pig—1st, D. Nauman & Son; 2d, M. C. Cramer & Son, on Golden Queen 2d, 575560; 3d, C. A Zellmer, on Willow Grove Lass, 575004; 4th, J. S. Golder, on Gilt; 5th, D. F. Bloomfield; 6th, M. C. Cramer & Son, on Big Mabel, 575532.

Senior Champion Boar—Baden & Kern, on Sensation Wonder 4th, 203591.

Senior Champion Sow—Ed. M. Kern, on Sensation Girl.

Junior Champion Boar—Thomas Robertson, on Grand Model Equal.

Junior Champion Sow—Brookwater Farm, on Brookwater Lass 2d.

Grand Champion Boar Any Age—Baden & Kern, on Sensation Wonder 4th.

Grand Champion Sow Any Age—Ed. M. Kern, on Sensation Girl.

Aged Herd Owned by Exhibitor—1st, Baden Kern; 2d, Brookwater Farms; 3d, J. E. Waltemeyer; 4th, J. S. Golden; 5th, J. P. Jorgenson; 6th, Carson & Trier.

Aged Herd Owned and Bred by Exhibitor—1st, Baden Kern; 2d, Brookwater Farm; 3d, J. D. Waltemeyer; 4th, J. S. Golden; 5th, Carson & Trier.

Young Herd Owned by Exhibitor—1st, M. C. Cramer; 2d, Brookwater Farm; 3d, J. P. Jorgenson; 4th, D. Nauman & Son; 5th, Peterson Bros.

Young Herd Bred and Owned by Exhibitor—1st, M. C. Cramer; 2d, Brookwater Farms; 3d, J. P. Jorgenson; 4th, D. Nauman & Son; 5th, Peterson Bros.

Get of Sire—1st, Ed. Kern; 2d and 3d, J. D. Waltemeyer; 4th, Kramer & Son; 5th, Brookwater Farm.

Produce of Dam—1st, J. E. Waltemeyer; 2d, Cramer & Son; 3d, Brookwater Farm; 4th, J. S. Golden; 5th, Peterson Bros.

NATIONAL DUROC JERSEY FUTURITY.

Boar Pig—1st and 2d, Cramer & Son; 3d, J. P. Jorgenson; 4th and 5th, J. H. Latta; 6th, Urbanside Farm; 7th, D. Nauman & Son; 8th, C. A. Zellmer.

Sow Pig—D. Nauman & Son; 2d, C. Cramer & Son; 3d, C. A. Zellmer; 4th, J. S. Golden; 5th, Peterson Bros.; 6th, J. P. Jorgenson; 7th, D. Nauman & Son.

Litter of Four—1st, C. Cramer & Son; 2d, D. Nauman & Son; 3d, Peterson Bros.; 4th, J. P. Jorgenson; 5th, J. D. Waltemeyer & Son; 6th, D. Nauman & Son; 7th, C. A. Zellmer; 8th, J. H. Latta.

SPECIAL PRIZES OFFERED BY THE AMERICAN DUROC JERSEY SWINE BREEDERS' ASSOCIATION.

Young Herd, Farrowed on or After March 1st, Bred and Owned by Exhibitor—J. W. Cartwright (Iowa special).

Best Aged Herd, Bred by or Farrowed the Property of the Exhibitor—Brookwater Farms.

Best Young Herd, Bred by or Farrowed the Property of the Exhibitor—1st, Brookwater Farms; 2d, J. W. Cartwright.

CHESTER WHITES.

Exhibitors: B. B. Nelly, Selma, Iowa; Alden Anderson, Story City, Iowa; Charlie & Mildred Barr, Ames, Iowa; M. J. Bolger, Menlo, Iowa; B. M. Boyer & Sons, Farmington, Iowa; Byron T. Calking, Webster City, Iowa; W. R. Crawford, Libertyville, Iowa; J. L. Dickerson, Knoxville, Iowa; F. O. Dickerson, Knoxville, Iowa; Louis Dickerson, Knoxville, Iowa; W. H. Dunbar, Jefferson, Iowa; E. R. Hem, Selma, Iowa; F. E. Humphrey, North English, Iowa; Gertrude Humphrey, North English, Iowa; Helen Humphrey, North English, Iowa; Geo. A. Lasley, Selma, Iowa; J. H. Lachmiller, Webster City, Iowa; J. H. Mahannah, North English, Iowa; Chas. Mitchell, Webster City, Iowa; Will Michael, Selma, Iowa; Geo. Miller, Algona, Iowa; E. L. Nagle & Son, Deep River, Iowa; D. H. Sleichter & Son, Riverside, Iowa; Guy E. Smith, Little York, Ill.; Geo. Steel, Algona, Iowa; E. L. Waring, Reasnor, Iowa; R. E. Williams, Iowa City, Iowa; Wm. Whitted, Monroe, Iowa; Leonard Willey, Menlo, Iowa.

JUDGE............................WM. A. HOOVER, Oskaloosa, Iowa.

Aged Boar—1st, D. H. Lewis, on Prince Again, 30497; 2d, B. M. Boyer & Sons, on Rajah, 32749; 3d J. E. Phelps, on Col. Chester, 44053; 4th, Alden Anderson, on Battle, 33773; 5th, Guy E. Smith, on White Prince, 24421.

Senior Yearling Boar—1st, W. T. Barr, on Hiland Improver, 39041; 2d, J. H. Lackmiller, on Combination Giant, 37983; 3d, Alden Anderson, on Chief's Corrector, 45237; 4th, Will Michael, on Golden Thistle, 40277; 5th, D. H. Lewis, on Elmo Duke, 45157; 6th, George Miller, on Master James, 40493; 7th, Wm. Whitted.

Junior Yearling Boar—1st, E. L. Nagle & Son, on Preparedness, 18353; 2d, B. M. Boyer & Sons, on Prince Big Bone, 43569; 3d, E. L. Nagle & Son, on Chief, 18577; 4th, W. T. Barr, on Pershing, 45179; 5th, W. J. Bolger, on Bolger's Prince, 41849; 6th, Guy E. Smith, on Loure R., 44617; 7th, Alden Anderson, on Investor, 42657.

Senior Boar Pig—1st, E. L. Nagle & Son, on Longfellow, 18575; 2d, E. L. Nagle & Son, on Wm. A., 18585; 3d, George Steil, on Model Select, 45223; 4th, B. M. Boyer & Sons, on Big Bone Prince, 43567; 5th, Guy E. Smith, on King Prince, 45055; 6th, F. E. Humphreys on Acme King's Improver, 44895; 7th, F. G. Dickerson, on Industry's Big Bob, 50172.

Junior Boar Pig—1st, J. H. & Duke Mahannah, on Supreme Judge O. K.; 2d, J. H. Lackmiller; 3d and 5th, George Steil; 4th, F. E. Humphreys, on Acme Frank, 44897; 6th, Charlie & Mildred Barr; 7th, J. H. & Duke Mahannah.

Aged Sow—1st, W. T. Barr, on Hiland Belle, 84776; 2d, W. T. Barr, on Our Maid 3d, 86502; 3d, Guy E. Smith, on White Miss, 91900; 4th, F. E. Humphreys, on Beauty E., 72804; 5th, E. L. Nagle & Son, on Myrtle B., 92654; 6th, Guy E. Smith, on Fancy, 84822; 7th, D. H. Lewis, on Alma 2d, 100728.

Senior Yearling Sow—1st, B. M. Boyer & Sons, on Big Beauty 2d, 99116; 2d, Guy E. Smith, on Grace 1st, 95630; 3d, W. T. Barr, on Lenora's Gem, 100766; 4th, E. L. Nagle & Son, on Queen Again, 31634; 5th, Alden Anderson, on Miss Chief, 100836; 6th, J. H. Lachmiller, on Beauty, 91734; 7th, D. H. Lewis, on Mamie, 100722.

Junior Yearling Sow—1st, Guy E. Smith, on Lady Smith, 100526; 2d, E. L. Nagle & Son, on May, 32298; 3d, W. T. Barr, on Hiland Frankie 2d, 100776; 4th, W. T. Barr, on Lenora's Prize, 100770; 5th, E. L. Nagle & Son, on Phylis, 32352; 6th, D. H. Lewis, on Ruby 1st, 100724; 7th, Alden Anderson, on Hawkeye Belle, 100848.

Senior Sow Pig—1st, E. L. Nagle & Son, on Harriett, 32304; 2d, Chas. Mitchell, on Sunlight, 100572; 3d, Alden Anderson, on Chief's Gem, 100844; 4th, J. H. & Duke Mahannah, on Jannito O. K. XX; 5th, Guy E. Smith, on Princess Belle, 100534; 6th, J. H. Lachmiller, on Foney May, 99432; 7th, W. T. Barr, on Hiland Pride 3d, 100780.

Junior Sow Pig—1st, R. E. Williams; 2d, Gertrude Humphrey; 3d, Alden Anderson; 4th, Chas. Mitchell; 5th, J. H. & Duke Mahannah, on Iowa O. K.; 6th Helen Humphrey; 7th, Charlie & Mildred Barr.

Senior Champion Boar—D. H. Lewis.

Senior Champion Sow—B. M. Boyer & Sons.

Junior Champion Boar—J. H. & Duke Mahannah, on Supreme Judge O. K.

Junior Champion Sow—E. L. Nagle & Son.

Grand Champion Boar—D. H. Lewis.

Grand Champion Sow—B. M. Boyer & Son.

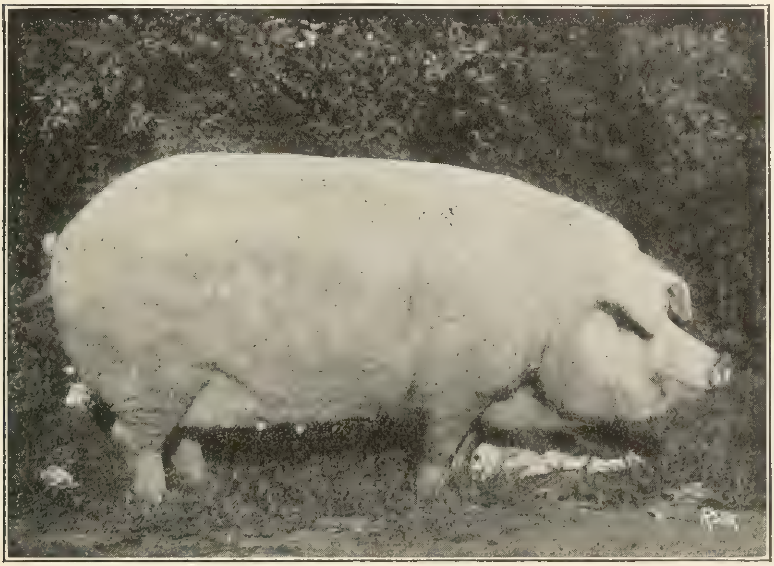
Aged Herd Owned by Exhibitor—1st, W. T. Barr; 2d, Guy E. Smith; 3d, E. L. Nagle & Son; 4th, D. H. Lewis; 5th, Alden Anderson.

Aged Herd Bred and Owned by Exhibitor—1st, W. T. Barr; 2d, D. H. Lewis; 3d, Alden Anderson.

Young Herd Owned by Exhibitor—1st, E. L. Nagle & Son; 2d, Guy E. Smith; 3d, D. H. Lewis; 4th, Chas. Mitchell; 5th, J. H. & Duke Mahannah; 6th, Alden Anderson; 7th, Charlie & Mildred Barr.

Young Herd Bred and Owned by Exhibitor—1st, E. L. Nagle & Son; 2d, Guy E. Smith; 3d, D. H. Lewis; 4th, Chas. Mitchell; 5th, J. H. Mahannah; 6th, Alden Anderson.

Get of Sire—1st, W. T. Barr; 2d, E. L. Nagle & Sons; 3d, Guy E. Smith; 4th, J. H. Lachmiller; 5th, D. H. Lewis; 6th, Chas. Mitchell; 7th, Alden Anderson.



Grand Champion Chester White Sow at the 1917 Iowa State Fair.
Owned by E. M. Boyer & Sons, Farmington, Iowa.

Produce of Dam—1st, E. L. Nagle & Son; 2d, Guy E. Smith; 3d, W. T. Bower; 4th, D. H. Lewis; 5th, Chas. Mitchell; 6th, Alden Anderson; 7th, Charlie & Mildred Barr.

SPECIAL PRIZE OFFERED BY THE IOWA CHESTER WHITE BREEDERS' ASSOCIATION, LIMITED TO BOYS AND GIRLS UNDER SIXTEEN YEARS OF AGE.

Best Chester White Pig Under Six Months of Age—1st, Harlow Lachmiller; 2d, Gertrude Humphreys; 3d, Helen Humphreys; 4th, Mildred Barr; 5th, Charley Barr.

BERKSHIRES.

Exhibitors: Brae-Burn Farm, Lake Forest, Ill.; W. S. Corsa, White Hall, Ill.; Nelle Fabyan, Geneva, Ill.

JUDGE.................................N. H. GENTRY, Sedalia, Mo.

Aged Boar—1st, W. S. Corsa, on Duke's Fearnaught, 218000; 2d, Nelle Fabyan, on King James of Riverbank, 229201.

Senior Yearling Boar—1st, W. S. Corsa, on Lassie's Matchless Emblem, 226241; 2d, Nelle Fabyan, on Kingston of Riverbank, 239968; 3d, Nelle Fabyan, on Czarina's King, 239961; 4th, Brae-Burn Farm, on Brae-Burn Rival Emperor, 231804.

Junior Yearling Boar—1st, W. S. Corsa, on Superb Fearnaught 2d, 239827; 2d, Rookwood Farm, on Rookwood Rival 6th, 229700; 3d, Brae-Burn Farm, on Brae-Burn Lee 2d, 229450; 4th, Sutton & Patrious, on Lees Robinhood 2d, 239017; 5th, Nelle Fabyan, on Kingdon of Riverbank, 239963; 6th, Brae-Burn Farm, on Brae-Burn Master Rival, 229449.

Senior Boar Pig—1st, Nelle Fabyan, on Viscount A of Riverbank, 239967; 2d, W. S. Corsa, on Superbus Winsome Lad, 239979; 3d, W. S. Corsa, on Superbus Winsome Lad 2d, 239980; 4th, Rookwood Farm, on Ames Rival, 154; 5th and 6th, Brae-Burn Farm; 7th, Sutton & Portious, on Sutton's Combination, 239024.

Junior Boar Pig—1st, Sutton & Portious, on Robinhood's Successor; 2d and 3d, Brae-Burn Farm.

Aged Sow—1st, Sutton & Portious, on Classy Stumpy, 224887; 2d and 3d, Brae-Burn Farm, on Brae-Burn Schoolmistress, 222381, and Brae-Burn Duchess, 220278.

Senior Yearling Sow—1st, Nelle Fabyan, on King's Marchioness, 229209; 2d and 3d, Brae-Burn Farm, on Brae-Burn Grand Duchess, 226645, and Brae-Burn Grand Duchess 2d, 226646; 4th, W. S. Corsa, on Rival's Matchless Baroness, 226827; 5th, W. S. Corsa.

Junior Yearling Sow—1st, W. S. Corsa, on Fearnaught Gem 2d, 239829; 2d and 3d, Nelle Fabyan, on Queen of Riverland, 239969, and Queen of Riverbank, 239970; 4th and 5th, Brae-Burn Farm, on Brae-Burn Model Lady 11th, 229442, and Brae-Burn Model Lady 10th, 229443; 6th, Sutton & Portious, on Robinhood Silver Tips, 239021.

Senior Sow Pig—1st and 2d, Nelle Fabyan, on Viscountess A. of Riverbank, 239964, and Viscountess B. of Riverbank, 239965; 3d and 5th, W. S. Corsa, on Superbus Winsome Lady, 239981, and Superbus Winsome Lady 2d, 239982; 4th and 6th, Brae-Burn Farm; 7th, Sutton & Portious, on S. & P. Jewell 4th, 239026.

Junior Sow Pig—1st and 2d, Brae-Burn Farm, 3d and 4th, Sutton & Portious, on Robinhood Lee and Jewell Keep On.

Senior Champion Boar—W. S. Corsa, on Duke Fearnaught, 21800.

Senior Champion Sow—W. S. Corsa, on Fearnaught Gem.

Junior Champion Boar—Nelle Fabyan, on Viscount A.

Junior Champion Sow—Nelle Fabyan, on Viscountess A.

Grand Champion Boar—W. S. Corsa, on Duke Fearnaught, 218000.

Grand Champion Sow—W. S. Corsa, on Fearnaught Gem.

Aged Herd Owned by Exhibitor—1st, W. S. Corsa; 2d, Nelle Fabyan; 3d, Sutton & Porteous; 4th and 5th, Brae-Burn Farm.

Aged Herd Owned and Bred by Exhibitor—1st, W. S. Corsa; 2d, Nelle Fabyan; 3d, Sutton & Porteous; 4th, Brae-Burn Farm.

Young Herd Owned by Exhibitor—1st, Nelle Fabyan; 2d, W. S. Corsa; 3d and 5th, Brae-Burn Farm; 4th, Sutton & Porteous.

Young Herd Bred and Owned by Exhibitor—1st, Nelle Fabyan; 2d, W. S. Corsa; 3d and 5th, Brae-Burn Farm; 4th, Sutton & Porteous.

Get of Sire—1st and 2d, Nelle Fabyan; 3d, W. S. Corsa; 4th, Brae-Burn Farm; 5th, Sutton & Porteous.

Produce of Dam—1st and 2d, Nelle Fabyan; 3d, W. S. Corsa; 4th, Brae-Burn Farm; 5th, Sutton & Porteous.

HAMPSHIRES.

Exhibitors: C. S. Bratt, Arapahoe, Neb.; T. C. Cole, Thurman, Iowa; G. S. Erb, Pleasantville, Iowa; E. L. Henke, Atlantic, Iowa; Harry Hopley, Atlantic, Iowa; Isom J. Martin, Kahoka, Mo.; Clayton Messenger, Keswick, Iowa; C. P. Paulsen, Nora, Neb.; R. L. Pemberton, LeGrand, Iowa; F. F. Silver, Cantril, Iowa; Art Shaw, Oskaloosa, Iowa; Turner Bros., DeWitt, Iowa.

JUDGE.................................CHAS. A. MARKER, Auburn, Ill.

Aged Boar—1st and 3d, C. P. Paulsen, on Cherokee Pattern, 23091, and Cherokee 3d, 28745; 2d, Wickfield Farm, on Lookout Chin Chin, 27703; 4th,

R. L. Pemberton, on Big Boy, 36729; 5th, T. C. Cole, on King of Meadow Brook, 28195; 6th, Art Shaw, on Iowa Dude, 5439; 7th, Turner Bros., on Belted Boy, 27311.

Senior Yearling Boar—1st, Clayton Messenger, on Peerless Boy, 43739; 2d, Scudder Bros., on America, 36111; 3d, Wickfield Farm, on Lookout Perfection, 45283; 4th, T. C. Cole, on Paulsen's Star 99th, 34653; 5th, C. S. Bratt, on Good Model, 33799; 6th, R. L. Pemberton, on Concillio, 33645; 7th, Turner Bros., on Pleasant Ridge King, 36423.

Junior Yearling Boar—1st, Wickfield Farm, on Wickware Favorite, 37245; 2d, Clayton Messenger, on Hawkeye Star, 45245; 3d, T. C. Cole, on Everette True, 38099; 4th, E. E. Wilcox, on Princess Boy, 36767; 5th, G. S. Erb, on Jim Lookout, 46297; 6th, Turner Bros., on Jess Willard, 35353; 7th, R. L. Pemberton, on Sunny Brook Duke 3d, 36397.

Senior Boar Pig—1st, Harry Hopley, on Homestake, 43111; 2d and 5th, Clayton Messenger, on Liberty Loan, 45243, and Sioux Lad 2d, 45271; 3d, Isom J. Martin, on Gem Tipton's Masterpiece, 45727; 4th, Wickfield Farm, on Lookout Meteor, 45279; 6th, C. P. Paulsen, on Paulsen's Choice, 45539; 7th, E. L. Heuke, on Jimmie Correct, 43469.

Junior Boar Pig—1st and 4th, C. P. Paulsen, on Nora's Cherokee 1st, 45225, and Cherokee's Star 1st, 45187; 2d, Clayton Messenger, on Hawkeye Junior, 46377; 3d, Isom J. Martin; 5th and 6th, Wickfield Farm; 7th, A. S. Bratt.

Aged Sow—1st, Wickfield Farm, on Polly Lookout, 92152; 2d and 3d, Clayton Messenger, on Lady Dawson 4th, 56566, and Sioux Queen 3d, 38996; 4th, R. L. Pemberton, on Susan, 48316; 5th, Scudder Bros., on Scudder's Allen 2d, 55592; 6th, Turner Bros., on Isabell 3d, 91234; 7th, Dr. T. C. Cole, on Silver Queen 188th, 75956.

Grand Champion Hampshire sow at the 1917 Iowa State Fair.
Owned by Wickfield Farms, Cantrill, Iowa

Senior Yearling Sow—1st and 2d, Wickfield Farm, on Lookout Girl, 77194, and Roxy Lookout 2d, 77172; 3d and 4th, Clayton Messenger, on Mayflower Lady 1st, 69394, and Mayflower Lady 2d, 69396; 5th, Scudder Bros., on Edna Girl, 84588; 6th, C. S. Bratt, on Alfalfa Queen 18th, 85100; 7th, R. L. Pemberton, on Dolly, 68954.

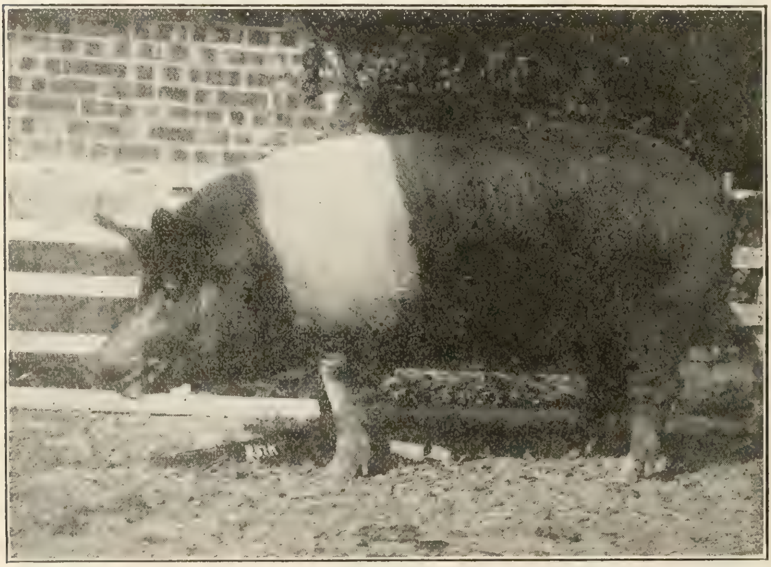
Junior Yearling Sow—1st and 4th, Wickfield Farm, on Cherokee Pearl, 80802, and Fairy; 2d, Clayton Messenger, on Flora, 92020; 3d, T. C. Cole, on Lady Signet 4th, 72094; 5th and 6th, G. S. Erb, on Lady Lookout, 94190, and Empress Lady, 94192; 7th, R. L. Pemberton, on Sioux Queen 4th, 68936.

Senior Sow Pig—1st and 2d, Wickfield Farm, on Lookout Starlight, 92094, and Lookout Twilight, 92092; 3d and 4th, Sioux Lady, 92024, and Sioux Lady 2d, 92022; 5th and 7th, Scudder Bros.; 6th, G. S. Erb, on Lady Bess, 94196.

Junior Sow Pig—1st and 3d, C. P. Paulsen, on Lady Cherokee 1st, 92954, and Cherokee Beauty, 91948; 2d, T. C. Cole; 4th, Scudder Bros.; 5th, Clayton Messenger, on Scottish Girl 10th, 92026; 6th and 7th, Wickfield Farm.

Senior Champion Boar—Wickfield Farm, on Wickware, 37245.

Junior Champion Boar—Harry Hoppley, on Homestake, 43111.



Junior Champion Hampshire boar at the 1917 Iowa State Fair.
Owned by Harry Hopley, Atlantic, Iowa.

Grand Champion Boar—Wickfield Farm, on Wickware Favorite, 37245.

Senior Champion Sow—Lookout Girl, 77194.

Junior Champion Sow—C. P. Paulsen, on Lady Cherokee 1st, 91954.

Grand Champion Sow—Wickfield Farm, on Lookout Girl, 77194.

Aged Herd—1st and 3d, Wickfield Farm; 2d and 4th, Clayton Messenger; 5th, Scudder Bros.; 6th, R. L. Pemberton; 7th, Turner Bros.

Aged Herd Bred by Exhibitor—1st and 3d, Clayton Messenger; 2d, Wickfield Farm; 4th, R. L. Pemberton; 5th, Scudder Bros.; 6th, Turner Bros.

Young Herd—1st and 5th, Clayton Messenger; 2d and 6th, Wickfield Farm; 3d, C. P. Paulsen; 4th, Scudder Bros.; 7th, T. C. Cole.

Young Herd Bred by Exhibitor—1st and 4th, Clayton Messenger; 2d, C. P. Paulsen; 3d, Scudder Bros.; 5th, Wickfield Farm; 6th, T. C. Cole; 7th, R. L. Pemberton.

Get of Sire—1st and 3d, Wickfield Farm; 2d and 4th, Clayton Messenger; 5th, C. P. Paulsen; 6th, Scudder Bros.; 7th, R. L. Pemberton.

Produce of Dam—1st and 2d, Clayton Messenger; 3d, C. P. Paulsen; 4th, Wickfield Farm; 5th, Scudder Bros.; 6th, R. L. Pemberton; 7th, T. C. Cole.

HAMPSHIRE ADVOCATE SPECIAL.

For Best Pair Pigs (Boar or Sow) Owned in Iowa—Clayton Messenger.

AMERICAN HAMPSHIRE SWINE RECORD ASSOCIATION SPECIAL AND IOWA HAMPSHIRE SWINE BREEDERS' ASSOCIATION SPECIAL.

For Best Four Pigs Under 6 Months, Any Sex, Bred and Owned in Iowa—1st, T. C. Cole; 2d, Wickfield Farm; 3d, E. L. Henke.

IOWA HAMPSHIRE BREEDERS' ASSOCIATION SPECIAL.

For Best Boar Under 6 Months, Shown by Resident of Iowa—R. L. Pemberton.

IOWA HAMPSHIRE SWINE BREEDERS' ASSOCIATION SPECIAL.

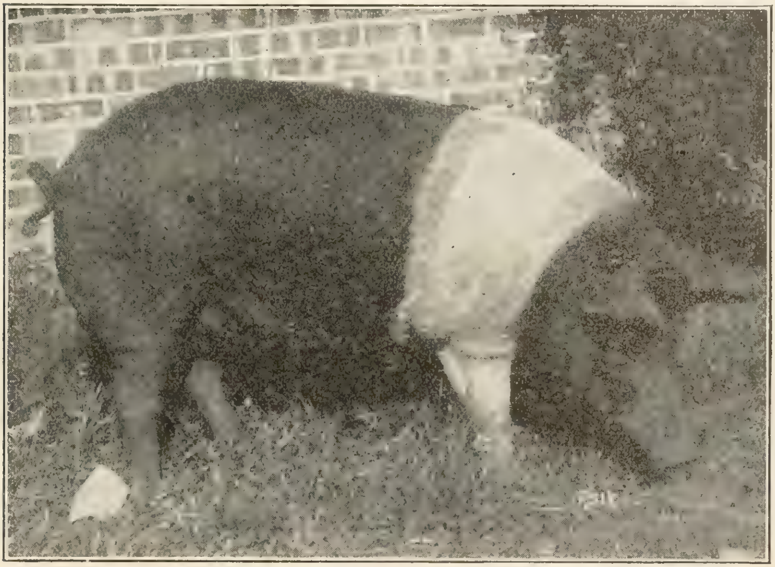
For Best Sow Pig Under 6 Months, Shown by Resident of Iowa—Art Shaw.

MULE FOOT.

Exhibitors: J. W. Cox & Son, Arapahoe, Neb.; F. S. Taylor, What Cheer, Iowa; R. G. Long, Arcadia, Ohio.

JUDGE..................................N. H. GENTRY, Sedalia, Mo.

Aged Boar—1st, J. W. Cox & Son, on King Attractor, 60981; 2d, R. G. Long, 3d, F. S. Taylor, on Taylor's Corrector, 61593.



Grand Champion Hampshire boar at the 1917 Iowa State Ftat.
Owned by Wickfield Farms, Cantrill, Iowa.

Senior Yearling Boar—1st, F. S. Taylor, on Chief 2d, 61597; 2d, R. G. Long.

Junior Yearling Boar—1st and 2d, F. S. Taylor, on Col. Corrector, 61639, and Dairy Corrector, 62968; 3d, J. W. Cox & Son, on Chieftain, 61503.

Senior Boar Pig—1st and 2d, F. S. Taylor, on Corrector 3d, 61643, and Corrector 4th, 61641; 3d, R. G. Long; 4th and 5th, J. W. Cox & Son.

Junior Boar Pig—1st and 2d, F. S. Taylor; 3d, J. W. Cox & Son.

Aged Sow—1st, J. W. Cox & Son, on Big Giantess, 61242; 2d, R. G. Long; 3d and 4th, F. S. Taylor & Son, on Summer Beauty, 62932, and Sarson's Queen, 60818.

Senior Yearling Sow—1st, F. S. Taylor, on Darkness, 62788; 2d, J. W. Cox & Son; 3d, R. G. Long.

Junior Yearling Sow—1st and 3d, F. S. Taylor, on Corrector Lady 1st, 62958, and Corrector Lady 2d, 62956; 2d and 4th, J. W. Cox & Son, on African Lady, 62544, and Rose A., 62540; 5th, R. G. Long.

Senior Sow Pig—1st and 2d, F. S. Taylor, on Darkness Again, 62960, and Black Bess, 62962; 3d and 4th, R. G. Long; 5th, J. W. Cox & Son.

Junior Sow Pig—1st and 2d, F. S. Taylor; 3d, J. W. Cox & Son; 4th and 5th, R. G. Long.

Senior Champion Boar—F. S. Taylor, on Col. Corrector, 61639.

Senior Champion Sow—J. W. Cox & Son, on Big Giantess, 61242.

Junior Champion Boar—F. S. Taylor, on Corrector 3d, 61643.

Junior Champion Sow—F. S. Taylor, on Darkness Again, 62960.

Grand Champion Boar—F. S. Taylor.

Grand Champion Sow—J. W. Cox & Son, on Big Giantess, 61242.

Aged Herd Owned by Exhibitor—1st and 3d, F. S. Taylor; 2d, J. W. Cox & Son.

Aged Herd Owned and Bred by Exhibitor—1st and 3d, F. S. Taylor; 2d, R. G. Long.

Young Herd Owned by Exhibitor—1st and 4th, F. S. Taylor; 3d, J. W. Cox & Son; 2d, R. G. Long.

Young Herd Owned and Bred by Exhibitor—1st and 4th, F. S. Taylor; 2d and 3d, J. W. Cox & Son.

Get of Sire—1st and 2d, F. S. Taylor; 4th, J. W. Cox & Son; 3d, R. G. Long.

Get of Sire—1st and 2d, F. S. Taylor; 3d, R. G. Long; 4th, J. W. Cox & Son.

Produce of Dam—1st, F. S. Taylor; 2d, R. G. Long; 3d, J. W. Cox & Son.

YORKSHIRES.

Exhibitors: B. F. Davidson, Menlo, Iowa; Haynes & Taylor, Guthrie Center, Iowa.

JUDGE....................................C. C. ROUP, Kalona, Iowa

Aged Boar—B. F. Davidson, on Lake Park Fashion, 18974.

Junior Yearling Boar—1st, B. F. Davidson, on Oak Lodge Sardis, 24238; 2d, Geo. and P. Oren Morris, on Prince of Enlea, 23609; 3d and 4th, Haynes & Taylor, on Guthrie Boy 1st, 25727, and Dew Creek Royal 7th, 24645.

Senior Boar Pig—1st and 2d, B. F. Davidson, on Deer Creek Lee 6th, 25658, and Deer Creek Reino 10th, 25912.

Junior Boar Pig—1st and 2d, B. F. Davidson, on Deer Creek High Class 12th, 25908, and Deer Creek Vernon 6th, 25913; 3d and 4th, Haynes & Royal, on Guthrie Boy 1st, 25727, and Deer Creek Royal 7th, 24645.

Aged Sow—1st and 2d, B. F. Davidson, on Deer Creek Martha 5th, 14977, and Deer Creek Classy Lass 5th, 22862; 3d, Haynes & Taylor, on Deer Creek Classy Lass 4th, 22691.

Senior Yearling Sow—Haynes & Taylor, on May H., 24249.

Junior Yearling Sow—B. F. Davidson, on Lake Park Sunbeam 95th, 25165.

Senior Sow Pig—1st and 2d, B. F. Davidson, on Deer Creek Rena 6th, 25920, and Deer Creek Rena 5th, 25921.

Junior Sow Pig—1st and 3d, Haynes & Taylor; 2d and 4th, B. F. Davidson, on Deer Creek Verba 1st, 25918, and Deer Creek Verba 2d, 25917.

Senior Champion Boar—B. F. Davidson, on Deer Creek Lee 6th, 25658.

Senior Champion Sow—B. F. Davidson, on Deer Creek Martha 5th, 14977.

Junior Champion Boar—B. F. Davidson.

Junior Champion Sow—B. F. Davidson, on Deer Creek Verba 1st, 25918.

Grand Champion Boar—B. F. Davidson, on Oak Lodge Sardis, 24238.

Grand Champion Sow—B. F. Davidson, on Deer Creek Martha 5th, 14977.

Aged Herd Owned by Exhibitor—B. F. Davidson.

Aged Herd Owned and Bred by Exhibitor—B. F. Davidson.

Young Herd Owned by Exhibitor—1st and 2d, B. F. Davidson; 3d, Haynes & Taylor.

Young Herd Owned and Bred by Exhibitor—1st and 2d, B. F. Davidson; 3d, Haynes & Taylor.

Get of Sire—1st and 2d, B. F. Davidson; 3d, Haynes & Taylor.

Produce of Dam—1st and 3d, B. F. Davidson; 2d, Haynes & Taylor.

SPECIAL PRIZE OFFERED BY B. F. DAVIDSON.

Best Four Pigs, Either Sex, Under Six Months—Haynes & Taylor.

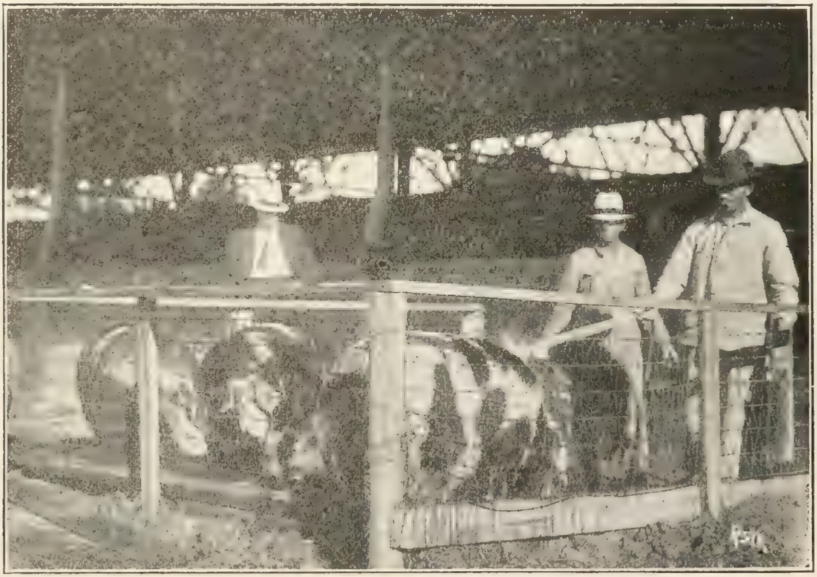
TAMWORTHS.

Exhibitors: J. B. Mackoy, Farragut, Iowa; Geo. & P. Oren Morris, Aledo, Ill.; F. H. Osen, Atlantic, Iowa; Propst Bros., Iowa City, Iowa; T. G. Scheer, Bethany, Ill.

JUDGE.................................C. C. ROUP, Kalona, Iowa

Aged Boar—1st and 4th, Geo. & P. Oren Morris, on Knoll Slope Anthony, 15176, and Mapleview Sultan, 18156; 2d and 5th, J. P. Mackay, on Knoll Cecil, 168222, and Iowa King, 17477; 3d, Miss Marie's Bess, 17964; 6th, F. H. Osen, on Knoll Cecil 2d, 17879.

Senior Yearling Boar—1st, F. H. Osen, on Knoll Chaffie, 19464; 2d, J. B. Mackoy, on Rose Model Chief, 19210; 3d, T. G. Scheer, on Kentucky Col., 19247.



"Dolling up" for the show ring. Washing hogs at the 1917 Iowa State Fair.

Junior Yearling Boar—1st and 3d, Geo. & P. Oren Morris, on Camp Creek Anthony, 18435, and Jolly Lad of Knoll Slope, 18438; 2d, Propst Bros., on Gay Fad, 20411; 4th, F. H. Osen, on Knoll Slope Laddie, 19463; 5th, T. G. Scheer, on Pleasant Hill Teddy, 20443; 6th, J. B. Mackoy, on Rose Model C., 20559.

Senior Boar Pig—1st, J. B. Mackoy, on Queen's Model Lad, 20547; 2d, Propst Bros.; 3d, T. G. Scheer, on Pleasant Hill Robert, 20544; 4th and 5th, F. H. Osen.

Junior Boar Pig—1st and 4th, Geo. & P. Oren Morris; 2d, Propst Bros.; 3d, J. B. Mackoy, on Model K., 20554; 5th, T. G. Scheer, on Pleasant Hill Watterson, 20531; 6th, F. H. Osen

Aged Sow—1st and 2d J. B. Mackoy, on Model Rose, 14782, and Miss Knowle 3d, 17463; 3d, Geo. & P. Oren Morris, on Knoll Slope Violet 9th, 17569; 4th and 5th, T. G. Scheer, on Model Lady 2d, 16918, and Effie D., 19473; 6th, Propst Bros., on Miss Bliss, 9433.

Senior Yearling Sow—1st and 2d, J. B. Mackoy, on Rose Model, 19207, and Rose Model 2d, 19208; 3d, T. G. Scheer, on Bertalene, 19735; 4th and 5th, F. H. Osen.

Junior Yearling Sow—1st, Geo. & P. Oren Morris, on Miss B. of Knoll Slope, 18434; 2d, Geo. & P. Oren Morris, on Knoll Slope Luetta 2d, 18433; 3d and 4th, Propst Bros., on Loma 7th, 19198, and Knoll Luetta, 19197; 5th, J. B. Mackoy, on Cecil's Model Lady 1st, 20560; 6th, T. G. Scheer, on Pleasant Hill Florence, 20548.

Senior Sow Pig—1st, J. B. Mackoy, on Queen's Model Girl 1st, 20550; 2d, T. G. Scheer, on Pleasant Hill Edna, 20547; 3d and 4th, Propst Bros.; 5th and 6th, F. H. Osen.

Junior Sow Pig—1st and 2d, J. B. Mackoy, on Knowle Model 4th, 20556, and Knowle Model 5th, 20557; 3d and 4th, Propst Bros.; 5th, T. G. Scheer, on Pleasant Hill Opal, 20536; 6th, Geo. & P. Oren Morris.

Senior Champion Boar—Geo. & P. Oren Morris.

Senior Champion Sow—J. B. Mackoy, on Queen's Model Girl 1st, 20550.

Junior Champion Boar—J. B. Mackoy, on Model K., 20554.

Junior Champion Sow—J. B. Mackoy, on Knowle Model 4th, 20556.

Grand Champion Boar—Geo. & P. Oren Morris.

Grand Champion Sow—J. B. Mackoy, on Rose Model, 19207.

Aged Herd Owned by Exhibitor—1st and 3d, Geo. & P. Oren Morris; 2d, J. B. Mackoy; 4th, Propst Bros.

Aged Herd Owned and Bred by Exhibitor—J. B. Mackoy.

Young Herd Owned by Exhibitor—1st, J. B. Mackoy; 2d, Propst Bros.; 3d, T. G. Scheer; 4th, Geo. & P. Oren Morris.

Young Herd Owned and Bred by Exhibitor—1st, T. G. Scheer; 2d and 3d, J. B. Mackoy; 4th, F. H. Osen.

Get of Sire—1st, Geo. & P. Oren Morris; 2d and 3d, J. B. Mackoy; 4th, T. G. Scheer.

Produce of Dam—1st, J. B. Mackoy; 2d, T. G. Scheer; 3d, Propst Bros.; 4th, F. H. Osen.

AMERICAN TAMWORTH SWINE RECORD ASSOCIATION SPECIAL.

Best Boar Any Age—Geo. & P. Oren Morris.

Best Sow Any Age—J. B. Mackoy.

SHEEP DEPARTMENT.

Superintendent....................Chas. Escher, Jr., Botna, Iowa

Exhibitors: Alex W. Arnold, Galesville, Wis.; C. S. Bratt, Arapahoe, Neb.; A. J. Blakely & Son, Grinnell, Iowa; E. L. Bitterman, Mason City, Iowa; C. W. Chandler, Kellerton, Iowa; C. C. Croxen, West Liberty, Iowa; E. Crall & Son, Evansville, Wis.; Joe Edgar, London, Iowa; H. D. Eddingfield, Mt. Pleasant, Iowa; R. F. Fantz, New Hampton, Iowa; J. S. Faucett & Son, Springdale, Iowa; Philip Fryermuth, Muscatine, Iowa; John Graham & Son, Eldora, Iowa; Holmes Bros., Milton, Iowa; Iowa State College, Ames, Iowa; A. T. Jones & Sons, Everly, Iowa; F. S King Bros. Co., Laramie, Wyo.; Watson Lovett, Zanesfield, Ohio; F. H. Osen, Atlantic, Iowa; Wayne C. Postle, Camp Chase, Ohio; Richards & Richards, Lodi, Wis.; J. A. Taylor, Ames, Iowa; W. A. Taylor & Son, Ames, Iowa; Walnut Hall Farms, Donerail, Ky.; F. F. Warner & Sons, Bloomfield, Iowa.

JUDGES.

Mutton Breeds..............Robert Miller, Stouffsville, Ont., Canada

Wool Breeds and Wool Exhibit..Prof. W. L. Blizzard, Stillwater, Okla.

MERINOS, CLASS B.

Ram Two Years or Over—1st and 4th, Watson Lovett; 2d, A. J. Blakely & Son, on A. J. Blakely, 2450; 3d, Richards & Richards, on R. D. Sly, 56.

Ram One Year Old and Under Two—1st and 4th, Watson Lovett; 2d, A. J. Blakely & Son, on A. J. Blakely, 2564; 3d, A. J. Blakely & Son, on A. J. Blakely, 2548.

Ram Under One Year—1st and 4th, Watson Lovett; 2d, Richards & Richards, on W. N. Cook & Son; 3d, A. J. Blakely & Son, on A. J. Blakely, 2618.

Ewe Two Years or Over—1st, Richards & Richards, on A. Y. G.; 2d, A. J. Blakely & Son; 3d and 4th, Watson Lovett.

Ewe One Year Old, Under Two—1st and 3d, Watson Lovett; 2d, Richards & Richards, on A. Y. G.; 4th, A. J. Blakely & Son, on A. J. Blakely, 2601.

Ewe Under One Year—1st, Richards & Richards, on W. N. Cook & Son; 2d, A. J. Blakely & Son, on A. J. Blakely, 2634; 3d and 4th, Watson Lovett.

Ram, Any Age—Watson Lovett.

Champion Ewe—Richards & Richards.

Flock—1st, Richards & Richards; 2d, Watson Lovett; 3d, A. J. Blakely & Son.

Get of Sire—1st, Watson Lovett; 2d, A. J. Blakely & Son; 3d, F. F. Warner & Son.

IOWA SPECIAL, CLASS B.

Ram Two Years or Over—1st, A. J. Blakely & Son, on A. J. Blakely, 2450.

Ram One Year Old, Under Two—1st and 2d, A. J. Blakely & Son, on A. J. Blakely, 2564, and A. J. Blakely, 2548; 3d, F. F. Warner & Son, on F. F. Warner.

Ram Under One Year—1st and 2d, A. J. Blakely & Son, on A. J. Blakely, 2618, and A. J. Blakely, 2620; 3d, F. F. Warner & Sons, on F. F. Warner.

Ewe Two Years or Over—1st and 2d, A. J. Blakely & Son, on A. J. Blakely, 2458, and A. J. Blakely, 2459; 3d, F. F. Warner & Sons, on F. F. Warner.

Ewe One Year Old, Under Three—1st and 2d, A. J. Blakely & Son, on A. J. Blakely, 2601, and A. J. Blakely, 2574; 3d, F. F. Warner & Sons, on F. F. Warner.

Ewe Under One Year—1st and 2d, A. J. Blakely & Sons, on A. J. Blakely, 2634, and A. J. Blakely, 2629; 3d, F. F. Warner & Sons, on F. F. Warner.

Champion Ram—A. J. Blakely & Son.

Champion Ewe—A. J. Blakely & Son.

Flock—1st, A. J. Blakely & Son; 2d, F. F. Warner & Sons.

Get of Sire—1st, A. J. Blakely & Son; 2d, F. F. Warner & Sons.

CLASS C.

Ram Two Years or Over—1st and 2d, Watson Lovett; 3d, A. J. Blakely & Son, on A. J. Blakely, 2453; 4th, Joe W. Edgar, on Rail's 119.

Ram One Year, Under Two—1st and 2d, Watson Lovett; 3d, A. J. Blakely & Son, on A. J. Blakely, 2542; 4th, Richards & Richards.

Ram Under One Year—1st and 3d, F. F. Warner & Sons, on F. F. Warner, and F. F. Warner; 2d and 4th, Watson Lovett.

Ewe Two Years or Over—1st and 2d, Watson Lovett; 3d, Richards & Richards; 4th, A. J. Blakely & Son, on A. J. Blakely, 2461.

Ewe One Year, Under Two—1st and 4th, Watson Lovett; 2d and 3d, A. J. Blakely & Son, on A. J. Blakely, 2578, and A. J. Blakely, 2575.

Ewe Under One Year—1st and 2d, Watson Lovett; 3d and 4th, A. J. Blakely & Son, on 2660, and A. J. Blakely 2628.

Champion Ram—Watson Lovett.

Champion Ewe—Watson Lovett.

Flock—1st, Watson Lovett; 2d, A. J. Blakely & Son; 3d, F. F. Warner & Sons.

Get of Sire—1st, Watson Lovett; 2d, A. J. Blakely & Son; 3d, F. F. Warner & Sons.

IOWA SPECIALS.

Ram Two Years or Over—1st, A. J. Blakely & Son, on A. J. Blakely, 2453; 2d, Joe W. Edgar.

Ram One Year Old and Under Two—1st and 2d, A. J. Blakely & Son, on A. J. Blakely, 2542, and A. J. Blakely, 2570; 3d, F. F. Warner & Sons, on F. F. Warner.

Ram Under One Year—1st, F. F. Warner & Sons, on F. F. Warner; 2d and 3d, A. J. Blakely & Sons, on A. J. Blakely, 2622, and A. J. Blakely, 2619.

Ewe Two Years or Over—1st and 3d, A. J. Blakely & Son, on A. J. Blakely, 2461, and A. J. Blakely, 2460; 2d, F. F. Warner & Sons, on F. F. Warner.

Ewe One Year Old, Under Two—1st and 2d, A. J. Blakely & Son, on A. J. Blakely, 2678, and A. J. Blakely, 2575; 3d, F. F. Warner & Sons, on F. F. Warner.

Ewe Under One Year—1st and 2d, A. J. Blakely & Son, on A. J. Blakely, 2660, and A. J. Blakely, 2628; 3d, F. F. Warner & Sons, on F. F. Warner.

Champion Ram—A. J. Blakely.

Champion Ewe—A. J. Blakely.

Flock—1st, A. J. Blakely & Son; 2d, F. F. Warner & Sons; 3d, Joe W. Edgar.

Get of Sire—1st, A. J. Blakely & Son; 2d, F. F. Warner & Sons; 3d, Joe W. Edgar.

RAMBOUILLETS.

Ram Two Years or Over—1st and 2d, F. S. King Bros. Co., on Wyo. Boy Jr., F. S. K. Co., 2471, and Welch 135, 82325.

Ram One Year Old and Under Two—1st and 2d, S. King Bros. Co., on F. S. K. Co., 3051, and F. S. King Co., 3092.

Ram Under One Year—1st and 2d, F. S. King Bros. Co., on F. S. K. Co., 3760, and F. S. K. Co., 3759.

Ewe Two Years Old or Over—1st and 2d, F. S. King Bros. Co., on F. S. K. Co., 1834, 78589, and F. S. K. Co., 1302, 71334.

Ewe One Year Old, Under Two—1st and 2d, F. S. King Bros. Co., on F. S. K. Co., 3056, and F. S. K. Co., 3061.

Ewe Under One Year—1st and 2d, F. S. King Bros. Co., on F. S. K. Co., 3780, and F. S. K. Co., 3782; 3d and 4th, C. S. Bratt.

Champion Ram—King Bros. Co.

Champion Ewe—King Bros. Co.

Flock—F. S. King Bros. Co.

Get of Sire—1st, F. S. King Bros. Co.; 2d, C. S. Bratt.

COTSWOLD, OPEN CLASS.

Ram Two Years Old and Over—1st and 4th, Alex W. Arnold; 2d and 3d, Richards & Richards, on Ferguson's 116, 79670, and Burton's 530, 81802.

Ram One Year, Under Two—1st, Alex W. Arnold; 2d, Richards & Richards, on Newman 106; 3d and 4th, Joe Edgar, on Edgar's 226, 82937, and Edgar's 227, 82938.

Ram Under One Year—1st and 2d, Alex W. Arnold; 3d, Richards & Richards, on Badger Lad, 86596; 4th, Joe Edgar, on Edgar's 243, 86511.

Ewe Two Years Old or Over—1st, Richards & Richards, on A 15, 82996; 2d, Alex W. Arnold; 3d and 4th, Joe Edgar, on Edgar's 210, 79020, and Edgar's 206, 79016.

Ewe One Year Old and Under Two—1st and 3d, Alex W. Arnold; 2d, Richards & Richards, on Campbell's 305, 83490; 4th, W. A. Taylor & Sons, on Maple Grove's 269, 83092.

Ewe Under One Year—1st and 4th, Richards & Richards, on Garne 8, and Campbell's 345, 86488; 2d and 3d, Alex W. Arnold.

Champion Ram—Alex W. Arnold.

Champion Ewe—Alex W. Arnold.

Flock—1st, Alex W. Arnold; 2d, Richards & Richards; 3d, Joe Edgar.

Get of Sire—1st, Alex W. Arnold; 2d, Joe Edgar; 3d, W. A. Taylor & Sons.

IOWA SPECIAL.

Ram Two Years Old or Over—1st and 2d, Joe W. Edgar, on Edgar's 219, 81225, and Edgar's 214.

Ram One Year Old, Under Two—1st and 2d, Joe W. Edgar, on Edgar's 226, 82937, and Edgar's 227, 82938; 3d, W. A. Taylor & Son, on Maple Grove's 260, 83091.

Ram Under One Year—1st and 2d, Joe W. Edgar, on Edgar's 243, 86511, and Edgar's 238, 86506; 3d, W. A. Taylor & Son, on Maple Grove's 299.

Ewe Two Years Old or Over—1st and 2d, Joe W. Edgar, on Edgar's 210, 79020, and Edgar's 206, 79016; 3d, W. A. Taylor & Son, on Maple Grove's 225, 80285.

Ewe One Year Old, Under Two—1st and 3d, W. A. Taylor & Son, on Maple Grove's 269, 83092, and Maple Grove's 250, 83090; 2d and 4th, Joe W. Edgar, on Edgar's 230, 82941, and Edgar's 228, 82939.

Ewe Under One Year—1st and 2d, Joe W. Edgar, on Edgar's 239, 86507, and Edgar's 245, 86513; 3d, W. A. Taylor & Son, on Maple Grove's 300.

Champion Ram—Joe W. Edgar, on Edgar's 226, 82929.

Champion Ewe—Joe W. Edgar, on Edgar's 210, 79020.

Flock—Joe W. Edgar.

Get of Sire—1st, Joe W. Edgar; 2d, W. A. Taylor & Sons.

SPECIAL PRIZE BY THE COTSWOLD REGISTRY ASSOCIATION.

Get of Sire, Consisting of Four Lambs, Either Sex, Get of One Sire, Bred by Exhibitor in Iowa—1st, Joe W. Edgar, on Edgar's 239, 86507; 2d, W. A. Taylor & Son, on Maple Grove 299.

LINCOLNS AND LEICESTERS.

Ram Two Years Old or Over—1st, Alex W. Arnold, on 32047; 2d, E. Crall & Son, on MacIntyre's 5, 27646.

Ram One Year Old and Under Two—Alex W. Arnold, on 32048.

Ram Under One Year—1st, Alex W. Arnold, on 32051; 2d, Alex W. Arnold, on 32052.

Ewe Two Years Old or Over—1st and 2d, Alex W. Arnold, on 26421, and 26422; 3d, E. Crall & Son, on 23630.

Ewe One Year Old, Under Two—1st, E. Crall & Son, on Maple's 29730; 2d and 3d, Alex W. Arnold, on 32049, and 32054.

Ewe Under One Year—1st and 2d, Alex W. Arnold, on 32044, and 32050; 3d, E. Crall & Son, on Crall's 323.

Champion Ram—A. W. Arnold, on 32048.

Champion Ewe—A. W. Arnold.

Flock—1st, Alex W. Arnold; 2d, E. Crall & Son.

Get of Sire—Alex W. Arnold.

HAMPSHIRE DOWNS.

Ram Two Years Old or Over—1st and 2d, Walnut Hall Farms, on 17079, and 13894; 3d, E. L. Bitterman, on Ritchie Bros. 235, 18468; 4th, John Graham & Sons, on Graham's 1051, 17408; 5th, Alex W. Arnold.

Ram One Year Old and Under Two—1st and 2d, Walnut Hall Farms; 3d, Iowa State College, on I. S. C. 441, 19676; 4th, Alex W. Arnold; 5th, John Graham & Sons, on Graham's 1044, 18862.

Ram Under One Year—1st and 2d, Alex W. Arnold; 3d and 4th, Walnut Hall Farms, on 21072, and 21140; 5th, E. L. Bitterman, on Bitterman's 100.

Ewe Two Years Old or Over—1st and 3d, Walnut Hall Farms, on 46267, and 33894; 2d and 5th, Alex W. Arnold; 4th, Iowa State College, on I. S. C. 337, 47218.

Ewe One Year Old and Under Two—1st and 3d, Alex W. Arnold; 2d and 4th, Walnut Hall Farms, on 50142, and 50138; 5th, Iowa State College, on I. S. C. 450, 47223.

Ewe Under One Year—1st and 4th, Walnut Hall Farms, on 51579, and 51680; 2d, Iowa State College, on I. S. C. 511; 3d and 5th, Alex W. Arnold.

Champion Ram—A. W. Arnold.

Champion Ewe—Walnut Hall Farms, on 46267.

Flock—1st, Walnut Hall Farms; 2d, Alex W. Arnold; 3d, Iowa State College; 4th, E. L. Bitterman.

Get of Sire—1st, Walnut Hall Farms; 2d, Alex W. Arnold; 3d, John Graham & Sons; 4th, E. L. Bitterman.

SPECIAL PRIZES OFFERED BY THE AMERICAN HAMPSHIRE SHEEP ASSOCIATION.

Flock Consisting of Two Yearling Ewes, Two Ewe Lambs and Ram, Any Age—John Graham & Sons, on Graham's 1042, 46408, Graham's 1041, 46407, Graham's 1163, 52349, Graham's 1162, 52348, Graham's 1051, 17408.

SHROPSHIRES, OPEN CLASS.

Ram Two Years Old or Over—1st and 3d, H. D. Eddingfield, on Eddingfield's 198, 406831, and Eddingfield's Best Yet, 391747; 2d, C. W. Chandler, on Robinson, 341276; 4th, A. T. Jones & Sons, on Bibby's Sensation, 439179.

Ram One Year Old and Under Two—1st, A. T. Jones & Sons, on 439183; 2d and 4th, H. D. Eddingfield, on Valley Home Mine, 429289, and Biddy 7; 3d, C. W. Chandler.

Ram Under One Year—1st, Iowa State College, on I. S. C. 546, 438504; 2d and 4th, H. D. Eddingfield, on Eddingfield's Major, 438420, and Eddingfield's Unicorn, 438422; 3d, J. S. Faucett & Son, on Faucett's Disturber, 439394.

Ewe Two Years Old or Over—1st and 3d, H. D. Eddingfield, on Eddingfield's 218, 443913, and Shield's 440, 418992; 2d and 4th, A. T. Jones & Sons, on F. B. 382, 429392, and Choice Butter 300, 406470.

Ewe One Year Old and Under Two—1st and 3d, H. D. Eddingfield, on Valley Home Mischief 315, 423727, and 423729; 2d and 4th, A. T. Jones & Sons, on F. B. 11, 448507, and A. T. Jones 253, 423823.

Ewe Under One Year—1st and 3d, A. T. Jones & Sons, on Jones 473, 448519, and Jones 492, 448522; 2d, Iowa State College, on I. S. C. 548, 447705; 4th, E. L. Bitterman, on East View's Min. B. 908, 447613.

Champion Ram—H. D. Eddingfield, on Eddingfield 198, 406831.

Champion Ewe—H. D. Eddingfield, on Eddingfield 218, 443913.

Flock—1st, H. H. Eddingfield; 2d, A. T. Jones & Sons; 3d, C. W. Chandler; 4th, E. L. Bitterman.

Get of Sire—1st, J. S. Faucett & Son; 2d, Iowa State College; 3d, H. D. Eddingfield; 4th, C. W. Chandler.

IOWA SPECIALS.

Ram Two Years Old or Over—1st, H. D. Eddingfield, on Eddingfield Best Yet, 391747; 2d, A. T. Jones & Sons, on West Minister Royal, 406469; 3d, C. W. Chandler, on Chandler's Rewarder, 437358; 4th, E. L. Bitterman, on Snow Down, 431119; 5th, J. S. Faucett & Son, on Spring Dale Model, 405967.

Ram One Year Old and Under Two—1st, H. D. Eddingfield, on Valley Home Mine, 429289; 2d and 4th, C. W. Chandler, on Chandler's 1875, and Chandler's 1874; 3d, A. T. Jones & Sons, on A. T. Jones 418, 439179; 5th, J. A. Taylor, on J. A. Taylor 324, 428837.

Ram Under One Year—1st and 3d, H. D. Eddingfield, on Eddingfield's Major, 438420, and Eddingfield's Unicorn, 438422; 2d, J. S. Fawcett & Son, on Fawcett's Disturber, 439394; 4th and 5th, A. T. Jones & Sons, on Jones 493, 448523, and Jones 495, 448520.

Ewe Two Years Old or Over—1st, A. T. Jones & Sons, on Choice Butter 300, 406470; 2d, C. W. Chandler, on Chandler's Waucoma, 445948; 3d, J. L. Fawcett & Son, on Fawcett's 285, 376650; 4th, E. L. Bitterman, on East View 817, 431103; 5th, W. A. Taylor & Son, on Maple Grove 228, 392376.

Ewe One Year Old and Under Two—1st, H. D. Eddingfield, on Valley Home Mischief, 423727; 2d, A. T. Jones & Sons, on Jones 253, 423823; 3d, J. A. Taylor, on J. A. Taylor 294, 428815; 4th, C. W. Chandler, on Chandler's 1873, 447592; 5th, E. L. Bitterman, on East View Lottie, 422051.

Ewe Under One Year—1st, A. T. Jones & Sons, on Jones 492, 448517; 2d, E. L. Bitterman, on East View's Miss B. 908; 3d, C. W. Chandler, on Chandler's 1860; 4th and 5th, H. D. Eddingfield, on Eddingfield's 510, 447629, Eddingfield's 505, 44726.

Champion Ram, Any Age—H. D. Eddingfield, on Eddingfield's Best Girl, 391747.

Champion Ewe, Any Age—H. D. Eddingfield, on Eddingfield's 307, 423729.

Flock—1st, H. D. Eddingfield; 2d, E. L. Bitterman; 3d, A. T. Jones & Sons; 4th, C. W. Chandler; 5th, J. S. Fawcett & Son.

Get of Sire—1st, H. D. Eddingfield; 2d, C. W. Chandler; 3d, E. L. Bitterman; 4th, A. T. Jones & Sons; 5th, J. A. Taylor.

AMERICAN SHROPSHIRE REGISTRY ASSOCIATION SPECIAL.

Ram Two Years Old or Over—1st and 2d, H. D. Eddingfield, on Eddingfield's 198, 406831, and Eddingfield's Best Yet, 391747; 3d, A. T. Jones & Son, on West Minster Royal, 406469; 4th, C. W. Chandler, on Chandler's Reward, 437359; 5th, E. L. Bitterman, on Snow Down, 431119.

Ram One Year, Under Two—1st, H. D. Eddingfield, on Valley Home Mine, 429289; 2d, C. W. Chandler, on Chandler's 1875, 438389; 3d, A. T. Jones & Sons, on A. T. Jones, 439179; 4th, C. W. Chandler, on Chandler's 1874, 438390; 5th, J. A. Taylor, on J. A. Taylor's 299, 422094.

Ram Lamb—1st and 3d, H. D. Eddingfield, on Eddingfield's Major, 438420, and Eddingfield's Unicorn, 438422; 2d, J. S. Fawcett & Son, on Fawcett's Disturber, 439394; 4th and 5th, A. T. Jones & Sons, on Jones 493, 448523, and Jones 495, 448520.

Ewe One Year, Under Two—1st and 2d, H. D. Eddingfield, on Valley Home Mischief, 423727, and Valley Home Faye 423729; 3d, A. T. Jones & Sons, on Jones 253, 423823; 4th, J. A. Taylor, on J. A. Taylor 294, 428815; 5th, C. W. Chandler, on Chandler's 1873, 447592.

Ewe Lamb—1st and 2d, A. T. Jones & Son, on Jones 473, 448519, and Jones 492, 448517; 3d, E. L. Bitterman, on Earl Van Min. B. 908, 447613; 4th, C. W. Chandler, on Chandler's 1860, 447603; 5th, H. D. Eddingfield, on Eddingfield 505, 447629.

Champion Ram—H. D. Eddingfield, on Eddingfield's Best Girl, 391747.

Champion Ewe—H. D. Eddingfield, on Eddingfield's 307, 423729.

Pen, Four Lambs—1st, J. S. Fawcett & Son, on 447610, 438394, 438398, 438396; 2d, H. D. Eddingfield, on 438420, 438422, 447629, 447626; 3d, C. W. Chandler, on 438529, 447604, 438528, 447603; 4th, E. L. Bitterman, on 447613, 447615, 447614, 447612; 5th, A. T. Jones & Son, on 448517, 448519, 448515, 448520.

Pen, Three Yearling Ewes—1st, H. D. Eddingfield, on 423727, 423929, 429292; 2d, E. L. Bitterman, on 422053, 422015, 422055; 3d, J. A. Taylor, on 428840, 428831, 428815; 4th, C. W. Chandler, on 447592, 447594, 447596.

Pen, Three Yearling Rams—1st, H. D. Eddingfield, on 429289, 438415, 438414; 2d, C. W. Chandler, on 438492, 438384, 438390; 3d, G. L. Bitterman, on 422050, 422057, 422046; 4th, J. A. Taylor, on 422099, 428830, 428837.

Best Show of His Own Breeding to Exhibitor Never Having Exhibited at the Iowa State Fair—Holmes Bros.

SPECIAL OFFERED BY IOWA SHROPSHIRE ASSOCIATION.

Ten Shropshire Ewes, Any Age, Owned and Bred by Exhibitor—H. D. Eddingfield, on Valley Home Mischief, 423727, Valley Home Missie, 423728, Valley Home Faye, 423729, Valley Home True, 429290, Valley Home Violet, 423725, Eddingfield 303, 447630, Eddingfield 322, 447634, Eddingfield 324, 447631, Eddingfield 352, 447633, Valley Home Margy, 429292.

IOWA SWEEP STAKES.

Best Ram, All Mutton Breeds—H. D. Eddingfield, on Eddingfield 198, 406831.

Best Ewe, All Mutton Breeds—H. D. Eddingfield, on Eddingfield 218, 443913.

OXFORDS, OPEN CLASS.

Ram Two Years or Over—1st, Iowa State College, on Bruce 65 of 1915, 70881; 2d, John Graham & Son, on Graham's 994, 69665; 3d and 5th, C. C. Croxen, on 75358, and 71401; 4th, John Graham & Son, on McKerrows Rumbo, 69133.

Ram One Year, Under Two—1st and 4th, John Graham & Sons, on Graham's 1055, 75304, and Graham's 1130; 2d, Richards & Richards, on W. H. 281, 79761; 3d, C. C. Croxen; 5th, F. H. Osen, on Osen's 101, 75649.

Ram Under One Year—1st, C. C. Croxen, on 79779; 2d and 3d, John Graham & Sons, on Graham's 1143, 80037, and Graham's 1144, 80035; 4th and 5th, Richards & Richards, on R. of S. 1389, 79765, and R. of S. 1400, 76766.

Ewe Two Years Old or Over—1st and 4th, John Graham & Sons, on Graham's 1023, 71470, and Graham's 990, 68265; 2d and 3d, Iowa State College, on I. S. C. 108, 69813, and I. S. C. 109, 69817; 5th, Richards & Richards, on R. of S. 1198, 75450.

Ewe One Year Old, Under Two—1st and 4th, Iowa State College, on I. S. C. 408, 76573, and I. S. C. 453, 76568; 2d, C. C. Croxen; 3d, John Graham & Sons, on Graham's 1140; 5th, Richards & Richards, on R. of S. 1355, 79762.

Ewe Under One Year—1st and 3d, John Graham & Sons, on Graham's 1145, 80034, and Graham's 1146, 80033; 2d and 5th, C. C. Croxen on 79780, and 79781; 4th, Richards & Richards, on R. of S. 1382, 79763.

Champion Ram, Any Age—Iowa State College on Bruce 65 of 1915, 70881.

Champion Ewe, Any Age—Iowa State College on I. S. C. 408, 76573.

Flock—1st, Iowa State College; 2d, John Graham & Sons; 3d, Richards & Richards; 4th, C. C. Croxen.

Get of Sire—1st, John Graham & Sons; 2d, Richards & Richards; 3d, C. C. Croxen; 4th, F. H. Osen.

IOWA SPECIALS.

Ram Two Years Old or Over—1st and 3d, John Graham & Sons, on Graham's 994, 69665, and Graham's 974, 68271; 2d and 4th, C. C. Croxen, on 75358 and 71401.

Ram One Year, Under Two—1st and 4th, C. C. Croxen, on 75364 and 75353; 2d, John Graham & Sons, on Graham's 1055; 3d, F. H. Osen, on Osen's 101, 75649.

Ram Under One Year—1st and 2d, John Graham & Sons, on Graham's 1143, and Graham's 1144; 3d and 4th, C. C. Croxen.

Ewe Two Years Old or Over—1st and 4th, John Graham & Sons, on Graham's 990, 68265, and Graham's 1023, 71470; 2d and 3d, F. H. Osen, on Simenton 183, 75644, and Osen's 43, 75632.

Ewe One Year, Under Two—1st, John Graham & Sons, on Graham's 1140; 2d, F. H. Osen on Osen's 91, 75646; 3d and 4th, C. C. Croxen on 75359, and 75365.

Ewe Under One Year—1st and 3d, C. C. Croxen; 2d, John Graham & Sons, on Graham's 1145; 4th, F. H. Osen on Osen's 117.

Champion Ram, Any Age—John Graham & Son.

Champion Ewe, Any Age—John Graham & Sons, on Graham's 990, 68265.

Flock—1st, John Graham & Son; 2d, C. C. Croxen; 3d, F. H. Osen.

Get of Sire—1st, C. C. Croxen; 2d, John Graham & Sons; 3d, F. H. Osen.

SPECIAL PRIZE OFFERED BY OXFORD RECORD ASSOCIATION.

Best Yearling Ram—1st, John Graham & Son, on Graham's 1055, 75304; 2d, C. C. Croxen, on Maple Grove 113, 75364.

Best Yearling Ewe—1st, John Graham & Son's, on Graham's 1140, 80028; 2d, F. H. Osen on F. H. Osen 99, 75646.

Best Pen Four Lambs, Either Sex—1st, John Graham & Sons, on Graham's 1145 80031, Graham's 1136 80034, Graham's 1138 80037, Graham's 1135 80033; 2d, C. C. Croxen, on Maple Grove 422 79779, Maple Grove 127 79769, Maple Grove 146 79781, Maple Grove 147 79780.

SOUTHDOWNS.

Ram Two Years Old or Over—1st, Iowa State College on L. D. R. No. 3 of 1915, 33800; 2d, R. F. Fantz on Fantz 57, 31003; 3d and 5th, J. A. Taylor, on Goodwood 411, 31634, and J. A. Taylor 4, 32754; 4th, Alex W. Arnold.

Ram One Year, Under Two—1st and 3d, E. L. Bitterman, on Fantz' 110, 33926, and Fantz' 108, 33924; 2d, J. A. Taylor, on J. A. Taylor 6, 33936; 4th, Alex W. Arnold; 5th, R. F. Fantz, on Fantz 109, 33925.

Ram Under One Year—1st and 2d, Iowa State College, on I. S. C. 516, and I. S. C. 512; 3d, J. A. Taylor, on J. A. Taylor 14; 4th, Alex W. Arnold; 5th, E. L. Bitterman, on Bitterman's 28.

Ewe Two Years Old or Over—1st, Iowa State College, on Chivetry 700 of 1914, 31536; 2d, E. L. Bitterman, on Fantz 102, 31008; 3d, Alex W. Arnold.

Ewe One Year Old, Under Two—1st, Iowa State College; 2d, Iowa State College, on I. S. C. 399, 34425; 3d, Alex W. Arnold; 4th, E. L. Bitterman, on Fantz 102, 33928; 5th, E. L. Bitterman.

Ewe Under One Year—1st, Iowa State College, on I. S. C. 509, 35403; 2d, Iowa State College, on I. S. C. 508, 35402; third, Alex W. Arnold; 4th and 5th, E. L. Bitterman, on Miss Sweetness and Sweet Miss.

Champion Ram, Any Age—Iowa State College, on L. D. R. No. 3 of 1915, 33800.

Champion Ewe, Any Age—Iowa State College, on I. S. C. 509, 35403.

Flock—1st, Iowa State College; 2d, Alex W. Arnold; 3d, E. L. Bitterman.

Get of Sire—1st, Iowa State College; 2d, E. L. Bitterman; 3d, Alex W. Arnold.

DORSETS.

Ram Two Years Old or Over—E. Crall & Son, on Mohr's 458, 17801.

Ram One Year Old and Under Two—E. Crall & Son, on Crall's 183.

Ram Under One Year—1st, E. Crall & Son, on Crall's 318; 2d, E. Crall & Son, on Crall's 319.

Ewe Two Years Old or Over—E. Crall & Son, on Miner's 1749, 17554.

Ewe One Year, Under Two—E. Crall & Son, on Crall's 181.

Ewe Under One Year—1st and 2d, E. Crall & Son, on Crall's 322, and Crall's 321.

Champion Ram, Any Age—E. Crall & Son.

Champion Ewe, Any Age—E. Crall & Son.

Flock—E. Crall & Son.

Get of Sire—E. Crall & Son.

CHEVIOTS.

Ram Two Years or Over—1st, W. A. Taylor & Son, on Illingtonian 480, 8930; 2d, E. Crall & Son, on Crall's 243, 8509; 3d, A. W. Arnold.

Ram One Year, Under Two—First, E. Crall & Son, on Crall's 271, 9646; 2d, A. W. Arnold; 3d, W. A. Taylor & Son, on Maple Grove's 270, 9460.

Ram Under One Year—1st, W. A. Taylor, on Maple Grove 293; 2d, A. W. Arnold; 3d, E. Crall & Son, on Crall's 337.

Ewe Two Years Old, or Over—1st, W. A. Taylor on Lady Illingtonian 468, 8927; 2d, A. W. Arnold; 3d, E. Crall & Son .

Ewe One Year Old, Under Two—1st and 3d, W. A. Taylor and Son, on Maple Grove's 236, 9459, and Maple Grove's 235, 9458; 2d, E. Crall & Son, on Crall's 272, 8548.

Ewe Under One Year—1st and 2d, E. Crall & Son, on Crall's 325, and Crall's 326; 3d, A. W. Arnold.

Champion Ram, Any Age—W. A. Taylor & Son, on Illingtonian 480, 8930.

Champion Ewe—W. A. Taylor & Son.

Flock—1st, W. A. Taylor & Sons; 2d, E. Crall & Son; 3d, A. W. Arnold.

Get of Sire—First, E. Crall & Son; 2d, W. A. Taylor & Son; 3d, A. W. Arnold.

ANGORA GOATS.

All awards won by J. A. Taylor.

WOOL EXHIBIT.

Long Wool Fleece—1st, 2d and 5th, W. A. Taylor & Son; 3d and 4th, Joe W. Edgar.

Medium Wool—1st and 2d, C. C. Croxen; 3d, L. F. Randolph; 4th and 5th, W. A. Taylor & Son.

Fine Wool—1st and 2d, F. F. Warner & Sons; 3d and 4th, J. F. Warner; 5th, L. F. Randolph.

Sweepstakes—F. F. Warner & Sons.

SHEEP SHEARING CONTEST.

With Power Machine by Professional—1st, Carl Brady, Knoxville, Iowa; 2d, Fred Peasley, Indianola, Iowa; 3d, E. C. Pyles, Union, Iowa.

With Hand Shears by Professional—1st, E. C. Pyles, Union, Iowa; 2d, Earl Brady, Knoxville, Iowa.

With Power Machine by Amateurs—1st, Edward G. Uhl, Ames, Iowa; 2d, John Graham & Sons, Eldora, Iowa; 3d, Chas. Brown, Des Moines, Iowa; 4th, Paul Spotts, Nora Springs, Iowa.

With Hand Shears by Amateurs—1st, J. P. Graham, Eldora, Iowa; 2d, W. A. Taylor & Sons, Ames, Iowa; 3d, Edward G. Uhl, Ames, Iowa.

With Power Machine by Boy Under Fifteen Years—1st, Day Peasley, Indianola, Iowa.

POULTRY DEPARTMENT.

Superintendent..............................C. H. Tribby, Mt. Pleasant.

AMERICAN BREED.

AWARDS.

Judges ....
F. H. Shellabarger, West Liberty, Ia.
Joseph Dagle, Richland, Ia.
D. E. Hale, Chicago, Ill.
Glen Richards, LeGrand, Ia.

Best Cockerel American Class—Silver Loving Cup.

White Wyandotte Cockerel—Beatrice Mansfield, Altoona, Ia.

Best Pullet American Class—Silver Loving Cup.

White Plymouth Rock—C. F. Stanghton, Cambridge, Ill.; Geo. F. White, Altoona, Iowa.

Flock—1—(96, 498, 487, 403, 457, 490, 444, 784, 476, 497, 461).

Flock—2—Wyandottes, Any Variety—1st, V. G. Warner, Bloomfield, Iowa; 2d, Beatrice Mansfield, Altoona, Iowa.

Flock, Rhode Island Red—1st, J. H. Hemmerling, Waterloo, Iowa; 2d, Redbird Farms & Hatchery, Des Moines, Iowa.

Barred Plymouth Rock, Cockerel Bred Cock—1st, F. J. Rettenmaier, Carroll, Iowa, (73); 2d, Carpenter & Anderson, Indianola, Iowa, (34); 3d, Crescent Poultry Farm, Des Moines, Iowa, (53).

Barred Plymouth Rock Cockerel, Cockerel Bred—1st, F. J. Rettenmaier, Carroll, Iowa, (75); 2d, J. H. Dwight, Des Moines, Iowa, (21); 3d, J. F. Harsh, New Virginia, Iowa, (106).

Barred Plymouth Rock Hen, Cockerel Bred—1st, J. H. Dwight, (30); 2d, M. H. Buck, Prairie City, Iowa, (47); 3d, Carl Wiggins, Prairie City, Iowa, (40).

Barred Plymouth Rock Pullet, Cockerel Bred—1st, E. W. Collins, Mt. Pleasant, Iowa, (62); 2d, Carl Wiggins, (43); 3d, Carl Wiggins, (42).

Barred Plymouth Rock Fowls (Pen), Cockerel Bred—1st, Carpenter & Anderson, Indianola, Iowa, 56, 163, 347, 167, 149; 2d, Carl Wiggins, 33, 34, 30, 31, 32; 3d, Adolph Richti, Newton, Iowa, 10, 17, 19, 25, 16.

Barred Plymouth Rock Chicks (Pen), Cockerel Bred—1st, Allenberger Bros., Ankeny, Iowa, 2, 8, 16, 20, 24; 2d, Carl Wiggins, 38, 39, 35, 36, 37; 3d, Allenberger Bros., Ankeny, Iowa, 9, 13, 17, 21, 23.

Barred Plymouth Rock Cock, Pullet Bred—1st, John Peterson, Randell, Iowa, 990; 2d, Crescent Poultry Farm, 99; 3d, M. H. Buck, 56.

Barred Plymouth Rock Cockerel (Pullet Bred)—1st and 3d, John Peterson, Randall, Iowa, 982, 983; 2d, L. E. Wilson, Eagle Grove, Iowa, 250.

Barred Plymouth Rock Hen (Pullet Bred)—1st, L. E. Wilson, 245; 2d, Allenberger Bros., 6; 3d, F. J. Rettenmaier, 64.

Barred Plymouth Rock Pullet (Pullet Bred)—1st, Adolph Ruchti, Newton, Iowa, 6; 2d, L. E. Wilson, 126; 3d, John Peterson, Randall, Iowa, 235.

Barred Plymouth Rock Exhibition Pen Fowls, Pullet Bred—1st, Adolph Ruchti, 40, 2, 14, 42, 50; 2d, Harley Hunt, Woodbine, 20, 21, 17, 18, 19; 3d, J. F. Harsh, New Virginia, Iowa, 163, 178, 393, 100, 177.

Barred Plymouth Rock Exhibition Pen Chicks, Pullet Bred—1st, Adolph Ruchti, Newton, Iowa, 12, 21, 20, 10, 11; 2d, J. F. Harsh, 140, 117, 158, 193, 189; 3d, John Peterson, 239, 240, 985, 237, 238.

WHITE PLYMOUTH ROCK.

Cock—1st and 3d, C. F. Stoughton, Cambridge, Ill., 180, 176; 2d, N. C. Lusk, Des Moines, Iowa, 40.

Cockerel—1st and 2d, C. F. Stoughton, Cambridge, Ill., 173, 161; 3d, J. R. Griffieon, Mitchellville, Iowa, 2.

Hen—1st, John C. Ingwersen, Mt. Pleasant, Iowa, 13; 2d, Scudder Bros., 116; 3d, C. F. Stoughton, 184.

Pullet—1st and 2d, C. F. Stoughton, 185, 198; 3d, N. C. Lusk, 104.

Pen Fowls—1st, Scudder Bros., Doniphan, Neb., 149, 145, 101, 1296, 141; 2d, J. C. Ingwersen, Mt. Pleasant, Iowa, 16, 1, 18, 4, 14.

Pen Chicks—Scudder Bros., 126, 134, 144, 102, 135.

BUFF PLYMOUTH ROCK.

Cock—1st and 2d, Crescent Poultry Farm, 938, 739; 3d, Peter Hove, Stanhope, Iowa, 50.

Cockerel—1st, Hanson Farms, Dean, Iowa, 198; 2d, Peter Hove, Stanhope, Iowa, 457.

Hen—1st, Peter Hove, 25; 2d, Crescent Poultry Farm, 309.

Pullet—1st and 2d, Hanson Farms 80, 78; 3d, Peter Hove, 408.

Pen Fowls—Peter Hove, 431, 429, 19, 26, 447.

Pen Chicks—Peter Hove, 44, 466, 40, 474, 0.

PARTRIDGE PLYMOUTH ROCK.

Cock—1st and 3d, Taylor Bros., Cambridge, Ill., 2, 4; 2d, Crescent Poultry Farm, 505.

Cockerel—1st and 2d, Taylor Bros., 9, 13.

Hen—1st and 3d, Crescent Poultry Farm, 516 and 532; 2d, Taylor Bros., 9.

Pullet—1st and 2d, Taylor Bros., 718, 16.

SILVER WYANDOTTE.

Cock—1st, A. & E. Tarbox, Yorkville, Ill., 296; 2d, V. G. Warner, Bloomfield, Iowa, 28; 3d, Mrs. A. J. Palmer, State Center, Iowa, 450.

Cockerel—1st and 2d, V. G. Warner, 99, 98; 3d, J. H. Todd, Villisca, Iowa, 56.

Hen—1st, V. G. Warner, 97; 2d, A. & E. Tarbox, 303; 3d, M. H. Buck, 162.

Pullet—1st and 3d, V. G. Warner, 94, 95; 2d, A. L. Anderson, Indianola, Iowa, 148.

Pen Fowls—1st, V. G. Warner, 92, 93, 56, 90, 91; 2d, A. & E. Tarbox, 307, 309, 308, 305, 306; 3d, Crescent Poultry Farm.

Pen Chicks—1st, A. & E. Tarbox, 313, 314, 310, 311, 312; 2d, V. G. Warner, 87, 88, 89, 85, 86; 3d, Mrs. A. J. Palmer, State Center, Iowa, 487, 498, 474, 484, 485.

GOLDEN WYANDOTTE.

Cock—1st, A. L. Anderson, 137; 2d, V. G. Warner, 28.

Cockerel—1st and 2d and 3d, A. L. Anderson, 132, 143, 146.

Hen—1st and 3d, A. L. Anderson, 105, 106; 2d, V. G. Warner, 64.

Pullet—1st, 2d and 3d, A. L. Anderson, 135, 136, 150.

Pen Fowls—1st, Crescent Poultry Farm; 2d, V. G. Warner, 71, 72, 32, 60, 79; 3d, A. L. Anderson, 128, 126, 145, 144.

Pen Chicks—1st, A. L. Anderson, 140, 133, 131, 147, 127.

WHITE WYANDOTTE.

Cock—1st, C. H. Frame, Villisca, Iowa, 14; 2d, Beatrice Mansfield, 94; 3d, Crescent Poultry Farm, 546.

Cockerel—1st, Beatrice Mansfield, Altoona, Iowa, 65; 2d, M. L. Boat, Pella, Iowa, 71.

Hen—1st, Beatrice Mansfield, 15; 2d and 3d, M. L. Boat, 37, 10.

Pullet—1st and 2d—Beatrice Mansfield, 428, 372.

Pen Fowls—1st, M. L. Boat, 69, 95, 101, 79, 37; 2d, Beatrice Mansfield, 22, 24, 20, 42, 21.

Pen Chicks—1st, Beatrice Mansfield, 375, 344, 66, 347, 374.

BUFF WYANDOTTE.

Cock—1st, V. G. Warner, 37.

Hen—1st, V. G. Warner, 70; 2d, Crescent Poultry Farm, 256.

Pen Fowls—1st, V. G. Warner, 83.

BLACK WYANDOTTE.

Cock—1st, Hanson Farms, Dean, Iowa, 76.

Hen—1st, Hanson Farms, 88.

PARTRIDGE WYANDOTTE.

Cock—1st and 2d, Crescent Poultry Farm, 521, 523; 3d, F. E. Fifield, Woodbine, Iowa, 122.

Cockerel—1st, F. E. Fifield, Woodbine, Iowa, 24.

Hen—1st, V. G. Warner, 88; 2d and 3d, Crescent Poultry Farm, 504, 25.

Pullet—1st and 2d, F. E. Fifield, 18, 16.

Pen Fowls—1st, Crescent Poultry Farm.

SILVER PENCILED WYANDOTTE.

Cock—1st and 2, V. G. Warner, 44, 73.

Cockerel—1st, Hanson Farms, 27; 2d and 3d, V. G. Warner, 65, 66.

Hen—1st, 2d and 3d, V. G. Warner, 71, 72, 70.

Pullet—1st, 2d and 3d, V. G. Warner, 69, 68, 67.

COLUMBIAN WYANDOTTE.

Cock—1st, Claus Gode, Williamsburg, Iowa, 9; 2d, Hanson Farms, Dean, Iowa, 62; 3d, Crescent Poultry Farm, 549.

Cockerel—1st and 2d, Claus Gode, 81, 25; 3d, Hanson Farms, 7.

Hen—1st, Crescent Poultry Farm, 331; 2d and 3d, Claus Gode, 126, 127.

Pullet—1st, Hanson Farms, 67.

BLACK JAVA.

Cock—1st, Crescent Farm.

Cockerel—1st, Crescent Farm.

Hen—Crescent Poultry Farm.

MOTTLED JAVA.

Crescent Poultry Farm, all awards. Cock, 511; Hen, 1st, 282; 2d, 315.

ROSE COMB DOMINIQUES.

Crescent Poultry Farm, all awards. 1st, Cockerel; Hen, 1st, 0; 2d, 529; Pullet, 1st, 288.

SINGLE COMB RHODE ISLAND RED.

Cock—1st, W. W. Moore, Pleasanton, Iowa, 84; 2d, Dana Wagner, Des Moines, 243; 3d, Hull & Price, Des Moines, 7.

Cockerel—1st, J. B. Thomas, Hampton, Iowa, 78; 2d, G. F. Wisecup, Woodward, Iowa, 200; 3d, Hull & Price, 11.

Hen—1st and 2d, Hull & Price, 10, 9; 3d, F. L. Reinhard & Son, Ottumwa, Iowa.

Pullet—1st, J. H. Dwight, Des Moines, 1; 2d, J. B. Thomas, Hampton, Iowa, 74; 3d, G. F. Winecup, Woodward, Iowa, 190.

Pen Fowls—1st, H. J. Hemmerling, Waterloo, Iowa, 7010, 7100, 2276, 7016, 8594; 2d, B. S. Long, Little Sioux, Iowa, 73, 27, 63, 55, 44; 3d, J. C. Ash, Norwalk, Iowa, 14, 15, 16, 17, 18.

Pen Chicks—1st, Hull & Price, 1, 2, 3, 4, 5; 2d, W. W. Moore, Pleasanton, 72, 47, 58, 53, 28.

ROSE COMB RHODE ISLAND RED.

Cock—1st, C. A. Romigh, Omaha, Neb., 6742; 2d and 3d, Mrs. Blanch Dougherty, Norwich, Iowa, 20, 19.

Cockerel—1st and 3d, C. A. Romeigh, 8, 6; 2d, Mrs. B. Dougherty, 77.

Hen—1st and 2d, Roy D. Brown, Sheffield, Iowa, 300, 997; 3d, Mrs. B. Dougherty, 85.

Pullet—1st, Roy D. Brown, Sheffield, Iowa, 804; 2d, C. A. Romigh, 17; 3d, Mrs. B. Dougherty, 93.

BUCKEYE.

All awards to Hanson Farms, Dean, Iowa. Cock, 28, 29; Cockerel, 42, 56; Hen, 43, 70; Pullet, 66, 46.

ASIATIC CLASS NO. 73.

Best Cockerel—Crescent Poultry Farm, 701, Silver Loving Cup.

Best Pullet—Weir Hart, Bondurant, Iowa, 69, Silver Loving Cup.

LIGHT BRAHMA.

Cock—1st, Crescent Farm, 924; 2d, Weir Hart, 44; 3d, Hanson Farm, 72.

Cockerel—1st, Crescent Farm, 701.

Hen—1st, Weir Hart, 50; 2d and 3d, Crescent Farm, 1, 749.

Pullet—1st and 2d, Weir Hart, 75, 69.

Pen Fowls—Weir Hart, 77, 80, 72, 79, 96; 2d, Crescent Farms.

Pen Chicks—1st and 3d, Chas. R. Daniel, Ridgeway, Mo., 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

DARK BRAHMA.

Cock—1st, 2d and 3d, Crescent Farm, 744, 915, 0.

Cockerel—1st, Crescent Farm, 941.

Hen—1st, 2d and 3d, Crescent Farm, 525, 746.

Pullet—1st, Hanson Farm, 69.

BUFF COCHIN.

Crescent Poultry Farm, Des Moines, Iowa, all awards.

Cock, 1st, 914; Hen, 1st, 2d and 3d; Pen Fowls, 1st.

PARTRIDGE COCHIN.

Cock—1st and 2d, Crescent Farm, 929, 946.

Hen—1st, Hanson Farms, 75; 2d and 3d, Crescent Farm, 540, 544.

WHITE COCHIN.

Cock—1st and 2d, Crescent Farms, 928, 949.

Hen—1st, Hanson Farms, 74; 2d and 3d, Crescent Farm, 522, 542.

BLACK COCHIN.

Hen—1st and 3d, Crescent Farms, 588, 537; 2d, Hanson Farms, 5.

BLACK LANGSHANS.

Cock—1st, Geo. W. Garvin, Mt. Pleasant, 36; 2d, Crescent Farms, 423.

Cockerel—1st and 2d, Weir Hart, Bondurant, Iowa, 68, 84; 3d, Geo. W. Garvin, 90.

Hen—1st, Crescent Poultry Farm, 562; 2d, Geo. W. Garvin, Mt. Pleasant, 95; 3d, Weir Hart, 94.

Pullet—1st, Geo. W. Garvin, 85.

Pen Fowls—1st, Geo. W. Garvin, 94, 50, 89, 163, 10.

Pen Chicks—Weir Hart, 83, 78, 91, 52, 46.

WHITE LANGSHANS.

Cock—1st, Weir Hart, 62; 2d, Hanson Farms, 48.

Cockerel—1st, 2d and 3d, Weir Hart, 20, 55, 74.

Hen—1st, Weir Hart, 24; 2d, Hanson Farms, 2613; 3d, Crescent Farms, 34.

Pullet—1st and 3d, Weir Hart, 71, 68; 2d, Hanson Farms, 2.

ORIENTAL GAMES AND BANTAMS.

GOLDEN SEABRIGHT.

Cock—1st, Crescent Farms, 63; 2d, R. E. Roup, Ames, Iowa, 2.

Cockerel—1st, F. L. Reinhard & Son.

Hen—1st, Crescent Farms, 52; 2d, R. C. Roup, Ames, 7.

Pullet—1st, F. L. Reinhard & Sons.

SILVER SEABRIGHT.

Cock—1st, Erle Smiley, 22.

Hen—1st,. Erle Smiley, 8.

WHITE ROSE COMB.

All awards Earl Smiley, Utica, Neb. Cock, 41, 82; Hen, 43, 79.

BLACK ROSE COMB.

Cock—1st and 2d, Frank Harris, Des Moines, 45, 46.

Cockerel—1st and 2d, Frank Harris, 35, 84.

Hen—1st, Frank Harris, 97; 2d, Crescent Poultry Farm, 8.

Pullet—1st and 2d, Frank Harris, 6 and 9.

WHITE BOOTED.

Erle Smiley, all awards. Cock, 11665, 52; Hen, 435, 26.

LIGHT BRAHMA.

Cock—1st, Erle Smiley, Utica, Neb., 252; 2d, Crescent Farms, 305.

Hen—1st, M. H. Buck, 59; 2d, Crescent Farms, 192.

DARK BRAHMA.

All awards to Erle Smiley. Cock, 79, 94; Cockerel, 286, 271; Hen, 76, 1331; Pullet, 269, 251.

BUFF COCHIN.

Cock—1st, Hanson Farms, 25; 2d, F. L. Reinhard & Son.

Cockerel—1st, F. L. Reinhard & Son.

Hen—1st, Hanson Farms; 2d, Crescent Farms, 217.

Pullet—1st, Hanson Farms, 32; 2d, F. L. Reinhard & Sons.

PARTRIDGE COCHIN.

Cock—1st, Hanson Farms, 77; 2d, Crescent Farms, 306.

Hen—1st, Beryl Parks, Des Moines, Iowa; 2d, Crescent Farms, 163.

Pullet—1st, Hanson Farms, 34.

WHITE COCHIN.

Cock—1st, Hanson Farms, 7; 2d, Crescent Farms, 302.
Hen—1st, Hanson Farms, 20; 2d, Crescent Farms, 191.

BLACK COCHIN.

Cock—1st, Hanson Farms, 13; 2d, Crescent Farms, 328.
Cockerel—1st, Hanson Farms, 5; 2d, Frank Harris, 28.
Hen—1st, Hanson Farms, 69; 2d, Reinhard & Sons.
Pullet—1st, Hanson Farms, 66.

BLACK TAILED JAPANESE.

Cock—1st and 2d, Crescent Farms, 156, 186.
Cockerel—1st, Hanson Farms, 91.
Hen—1st and 2d, Crescent Farms, 181, 72.
Pullet—1st, Hanson Farms, 18.

WHITE JAPANESE.

Cock—1st, Hanson Farms, 47; 2d, Crescent Poultry Farms, 179.
Hen—1st, Hanson Farms, 3922; 2d, Crescent Farms.

BLACK JAPANESE.

Cock—1st, Hanson Farms, 100.
Hen—1st and 2d, Hanson Farms, 8, 35.

BEARDED WHITE POLISH.

Cock—1st and 2d, Hanson Farm, 71, 59.
Hen—1st and 2d, Hanson Farm, 98, 5.

BUFF LACED POLISH.

All awards Hanson Farms. Cock, 1, 33; Hen, 43, 3.

NON-BEARDED POLISH.

All awards Hanson Farms. Cock, 1st, 54; 2d, 77; Hen, 30, 76.

WHITE PEKIN DUCKS.

Old Drake—1st and 3d, V. G. Warner, 67, 39; 2d, Scudder Bros., 8131.

Young Drake—1st, V. G. Warner, 40; 2d and 3d, Scudder Bros., 110, 147.

Old Duck—1st, Scudder Bros., 8148; 2d, C. D. Warren, Altoona, 21; 3d, V. G. Warner, 64.

Young Duck—1st and 3d, V. G. Warner, 29, 38; 2d, Scudder Bros., 136.

WHITE AYLESBURY.

All awards to Hanson Farms. Young Drake, 44, 60; Young Duck, 89, 38.

COLORED ROUEN.

All awards to Hanson Farms. Young Drake, 26, 50; Old Duck, 36; Young Duck, 34, 55.

BLACK CAYUGA.

Old Drake—1st, R. C. West, 4; 2d and 3d, Hanson Farms, 82, 35.
Old Duck—1st and 3d, R. C. West, 50, 20; 2d, Hanson Farms, 36.

GRAY CALL

All Awards to Hanson Farms. Old Drake, 27, 28; Young Drake, 32, 34; Old Duck, 33, 30; Young Duck, 37, 46.

WHITE CALL

All Awards to Hanson Farms. Young Drake, 34; Old Duck, 42, 26; Young Duck, 49, 48.

BLACK EAST INDIA

All Awards to Hanson Farms. Old Drake 50, 45; Old Duck, 43, 47.

WHITE CRESTED

All Awards Hanson Farms. Old Drake, 31; Young Drake, 41; Old Duck, 275, 277; Young Duck, 39, 38.

COLORED MUSCOVY.

Old Drake—1st, R. E. West, 21; 2d, M. C. Buck, 154; 3d, Hanson Farms 40.
Old Duck,—1st, M. H. Buck, 87; 2d, Hanson Farms, 44; 3d, R. E. West, 2.

WHITE MUSCOVY

All Awards—Hanson Farms.

FAWN AND WHITE INDIAN RUNNER

Old Drake—1st and 2d F. L. Reinhard & Son, 41, 33; 3, W. W. Moore, 46.
Young Drake—1st and 2d, F. L. Reinhard & Son; 3d, W. W. Moore, 37.
Old Duck—1st and 2d, F. L. Reinhard & Son; 3d, W. W. Moore,. 16.
Young Duck—1st and 2d, F. L. Reinhard & Son; 3d, Mrs. C. D. Hunt, 14.

WHITE INDIAN RUNNER

Old Drake—1st, Hanson Farms, 284; 2d and 3d, F. L. Reinhard & Son.
Young Drake—1st and 2d, Reinhard & Son.
Old Duck—1st and 2d, F. L. Reinhard & Son; 3d, C. D. Warren, 124.
Young Duck—1st and 2d, F. L. Reinhard & Son.

BLUE SWEDISH

All Awards to Hanson Farms. Old Drake, 50; Young Drake, 49; Old Duck, ; Young Duck, 43.

GRAY TOULOUSE GEESE

Old Gander—1st, Hanson Farms, 45; 2d, City View Farm, 20; 3d, Crescent Poultry Farms.

Young Gander—1st and 2d, Hanson Farms, 37, 36; 3d, City View Farm, Des Moines, 19.

Old Goose—1st, Arthur Dearinger, Reasnor, Ia., 63; 2d, Crescent Poultry Farm; 3d, Hanson Farms, 33.

Young Goose—1st and 2d, Hanson Farms, 40, 41.

WHITE EMBDEN GEESE.

Old Gander—1st and 3d, O. C. Bierma, 171, 153; 2d, Crescent Farm.
Young Gander—1st and 3d, Scudder Bros., 119, 123; 2d, Hanson Farms, 39.
Old Goose—1st, Scudder Bros., 124; 2d and 3d, O. C. Bierma, 164, 39.
Young Goose—1st and 3d, Hanson Farms, 35, 38; 2d, Scudder Bros., 128.

GRAY AFRICAN

Old Gander—1st and 2d, Hanson Farms, 32, 28.
Young Gander—Hanson Farms, 1st, 27.
Old Goose—Hanson Farms, 2d and 3d. 1st, R. E. West, 45.
Young Goose—1st and 2d, Hanson Farms, 26, 92.
Brown Chinese.

BROWN CHINESE.

All Awards to Hanson Farms. Old Gander, 97, 88; Young Gander, 91; Old Goose, 90; Young Goose.

WHITE CHINESE.

Old Gander—1st, F. L. Reinhard & Son; 2d and 3d, Hanson Farms, 397, 17.
Young Gander—1st, Hanson Farms, 83; 2d, F. L. Reinhard & Sons.

Old Goose—1st, Hanson Farms, 398; 2d, F. L. Reinhard & Sons; 3d, Crescent Poultry Farms.

Young Goose—1st, F. L. Reinhard & Sons; 2d and 3d, Hanson Farms.

GRAY WILD OR CANADIAN GEESE.

All Awards to Hanson Farm. Old Gander, 406, 82, 100; Young Gander, 79, 78; Old Goose, 393, 403.

MEDITERRANEAN.

Best Cockerel—Silver Loving Cup, 1st, H. & H. Kinley, Florence, Neb., 119

Best Pullet—1st, H. & H. Kinley, 157.

Flock, Any Variety—1st, J. M. Williamson, Des Moines, Ia., (255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266); 2d, C. D. Joslin, Holstein, Ia., (8, 9, 10, 11, 1, 2, 3, 4, 5, 6, 7); 3d, Albert R. Rice, Waverly, Ia., (7, 2, 27, 35, 3, 6, 7, 5, 1, 15, 26).

SINGLE COMB BROWN LEGHORN COCK.

1st, W. O. Coon, Des Moines, Ia., 1; 2d, W. O. Coon, Des Moines, Ia., 3; 3d, W. O. Coon, Des Moines, Ia., 2.

SINGLE COMB BROWN LEGHORN CKL.

1st, Hanson Farms, Dean, Ia., 24; 2nd, W. O. Coons, 6; 3d, Bonnie H. Lunnon, Des Moines, Ia., 9.

SINGLE COMB BROWN LEGHORN HEN.

1st, Bonnie H. Lunnon, 2; 2nd and 3d, Bonnie H. Lunnon, 3, 1.

SINGLE COMB BROWN LEGHORN PULLET.

1st, Hanson Farms, 82; 2d, Albert R. Rice, 11; 3d, Bonnie H. Lunnon, 12.

SINGLE COMB BROWN LEGHORN PEN OF FOWLS.

1st, W. O. Coons, (10, 11, 12, 13, 14; 2nd, Frank Keats, Des Moines, Ia., (1, 2, 3, 4, 5); 3. W. O. Coons, (15, 16, 17, 18, 19).

SINGLE COMB BROWN LEGHORN PEN OF CHICKS.

1st, Bonnie H. Lunnon, (14, 15, 16, 17, 18).

ROSE COMB BROWN LEGHORN COCK.

1st, Albert R. Rice, 381; 2d, Crescent Poultry Farms, Des Moines, Ia., 535; 3d, C. D. Joslin, 17.

ROSE COMB BROWN LEGHORN COCKEREL.

1st, C. D. Joslin, 12; 2d, Albert R. Rice, 28; 3d, Albert R. Rice, 29.

ROSE COMB BROWN LEGHORN HEN.

1st, 2d, and 3d, Albert R. Rice, (467, 456, 452).

ROSE COMB BROWN LEGHORN PULLET.

1st, 2d and 3d, Albert R. Rice, (39, 41, 46).

SINGLE COMB WHITE LEGHORN COCK.

1st, H. E. Williamson, Dubuque, Ia., 122; 2nd, Hyperion White Leghorn Farm, Des Moines, Ia., 6; 3d, H. & H. Kinley, 107.

SINGLE COMB WHITE LEGHORN COCKEREL.

1st, 2d and 3d, H. E. Williamson, 186, 166, 150.

SINGLE COMB WHITE LEGHORN HEN.

1st and 2d, Heyliger De Windt, Oconomowoc, Wis., 454, 452; 3d, A. G. Thompson, Central City, Nebr., 7.

SINGLE COMB WHITE LEGHORN PULLET.

1st, H. & H. Kinley, 157; 2d, H. E. Williamson, 54; 3d, Hyperion White Leghorn Farm, 15.

SINGLE COMB WHITE LEGHORN PEN OF FOWLS.

1st, H. & H. Kinley, 111, 141, 143, 145, 147; 2d, J. M. Williamson, 254, 269, 251, 252, 253; 3d, Hyperion White Leghorn Farm, 16, 17, 18, 19, 20.

SINGLE COMB WHITE LEGHORN PEN OF CHICKS.

1st, H. & H. Kinley, 119, 193, 195, 197, 199; 2d, Hyperion White Leghorn Farm, 21, 22, 23, 24, 25; 3d, A. G. Thompson, 13, 14, 15, 16, 17.

ROSE COMB WHITE LEGHORN COCK

1st, Hanson Farm, 292; 2d, Crescent Poultry Farms, 742.

ROSE COMB WHITE LEGHORN COCKEREL

1st, 2d and 3d, Hanson Poultry Farms, 281, 77, 87.

ROSE COMB WHITE LEGHORN HEN.

1st, Hanson Farms, 264; 2d and 3d, Crescent Poultry Farms, 203, 222.

ROSE COMB WHITE LEGHORN PULLETS.

1st, 2d and 3d, Hanson Farms, 280, 287, 95.

SINGLE COMB BUFF LEGHORN COCK.

1st and 3d, Clifford A. Barr, Lincoln, Nebr., 4, 5; 2d, O. E. Ingle, Bondurant, Ia., 25.

SINGLE COMB BUFF LEGHORN COCKEREL.

1st and 3d, Mrs. H. Hoskins, Fairfield, Ia., 40, 43; 2d, Otto Timm, Bennington, Nebr., 75.

SINGLE COMB BUFF LEGHORN HEN.

1st and 2d, O. E. Ingle, 26, 28; 3d, Otto Timm, 22.

SINGLE COMB BUFF LEGHORN PULLET

1st, Clifford A. Barr, 15; 2d, Otto Timm, 9; 3d, Mrs. H. Hosking, 50.

SINGLE COMB BUFF LEGHORN PEN OF FOWLS.

1st, Clifford A. Barr, 20, 21, 22, 23, 24.

SINGLE COMB BUFF LEGHORN PEN OF CHICKS

1st, Otto Timm, 14, 20, 14, 81, 19; 2d, Mrs. H. Hosking, 34, 33, 32, 39, 36; 3d, Otto Timm, 77, 18, 12, 19, 17.

SINGLE COMB BLACK LEGHORN COCK.

1st Hanson Farms, 79; 2d, Crescent Poultry Farms, 327.

SINGLE COMB BLACK LEGHORN COCKEREL.

1st, Hanson Farms, 92.

SINGLE COMB BLACK LEGHORN HEN.

1st, Hanson Farms, 9; 2d, Crescent Poultry Farms, 199; 3d, F. L. Reinhard & Sons, Ottumwa, Ia.

SICILIAN BUTTERCUP HEN.

1st and 2d, Grace M. Heald, Des Moines, Ia, 5, 6.

SINGLE COMB BLACK MINORCA COCKEREL

1st and 3d, G. Groom, Altoona, Ia., 21, 22.

SINGLE COMB BLACK MINORCA HEN

1st, A. B. Porter, Mt. Pleasant, Ia., 199; 2d, G. Groom, 20.

SINGLE COMB BLACK MINORCA PULLET

1st and 2d, G. Groom, 24, 23; 3d, T. L. Jones, Boone, Ia., 52.

SINGLE COMB BLACK MINORCA PEN OF FOWLS.

1st, T. L. Jones, 4, 19, 6, 71687, 20.

ROSE COMB BLACK MINORCA HEN.

1st and 2d, Hanson Farms, 137, 82.

ROSE COMB BLACK MINORCA PULLET

1st, F. L. Reinhardt & Sons.

SINGLE COMB WHITE MINORCA HEN.

1st, Hanson Farms, 42.

W. F. BLACK SPANISH COCKEREL.

1st, Crescent Poultry Farms——.

BLUE ANDALUSIAN COCK.

1, Hanson Farms, 100; 2d and 3d, Crescent Poultry Farms, 526, 214.
1st, Hanson Farms, 71; 2d, Crescent Poultry Farms, 325.

BLUE ANDALUSIAN COCKEREL.

1st, Hanson Farms, 71; 2d, Crescent Poultry Farms, 325.

BLUE ANDALUSIAN HEN.

1st and 3d, Crescent Poultry Farms, 341, 194; 2d, Hanson Farms, G4915.

MOTTLED ANCONA COCK.

1st, Mrs. W. O. DeMoss, Des Moines, Ia., 6; 2d, Mrs. H. H. Mugge, Des Moines, Ia., 77.

MOTTLED ANCONA COCKEREL.

1st and 2d, Mrs. H. H. Mugge, 74, 75; 3d, Mrs. W. O. DeMoss, 186.

MOTTLED ANCONA HEN.

1st, Mrs. H. H. Mugge, 76; 2d, Mrs. W. O. DeMoss, 136; 3d, Hanson Farms, 83.

MOTTLED ANCONA PULLET

1, Mrs. Mugge, 72; 2d and 3d, Mrs. W. O. DeMoss, 155, 157.

SILVER CAMPINE COCK.

1st, O. L. Beeks, Des Moines, Ia., 61.

SILVER CAMPINE COCKEREL.

1st, O. L. Beeks, 1.

SILVER CAMPINE HEN.

1, O. L. Beeks, 67; 2d and 3d, Crescent Poultry Farms, 319, 295.

SILVER CAMPINE PULLETS

1st, 2d and 3d, O. L. Beeks, 4, 6, 8.

ENGLISH CLASS.

BEST COCKEREL.

Silver Loving Cup—1st, Dr. G. H. Humphrey, Woodbine, Ia., Black Orpington Cockerel, 22.

BEST PULLET.

Silver Loving Cup—1st, Dr. G. H. Humphrey, Woodbine, Ia., Black Orpington Pullet, 20.

WHITE DORKING COCK.

1st, Crescent Poultry Farms,—.

WHITE DORKING HEN.

1st, Crescent Poultry Farms, —.

SILVER GREY DORKING HEN.

1st and 2d, Handson Farms, 65, 135.

ROSE COMB RED CAP COCK.

1st and 3d, Crescent Poultry Farms, —; 2d, Hanson Farms, 11.

ROSE COMB RED CAP HEN.

1st and 2d, Hanson Farms, 52, 71.

ROSE COMB RED CAP PULLET

1st and 2d, Hanson Farms, 58, 91.

RED SUSSEX COCK.

1st, A. & E. Tarbox, Yorkville, Ill., 315.

RED SUSSEX COCKEREL.

1st, A. & E. Tarbox, 316; 2d, Crescent Poultry Farms, 713.

RED SUSSEX HEN.

1st, A. & E. Tarbox, 317.

RED SUSSEX PEN OF CHICKS.

1st, A. & E. Tarbox, 327, 328, 324, 325, 326.

SPECKLED SUSSEX COCK.

1st, A. & E. Tarbox, 329; 2d, Hanson Farms, 4.

SPECKLED SUSSEX COCKEREL.

1st, A. & D. E. Tarbox, 330.

SPECKLED SUSSEX HEN.

1st, Geo. W. Garvin, Mt. Pleasant, Ia., 82; 2d, A. & E. Tarbox, 331.

SPECKLED SUSSEX PULLET.

1st, A. & E. Tarbox, 332.

SPECKLED SUSSEX PEN OF FOWLS.

1st, A. & E. Tarbox, 336, 337, 333, 334, 335.

SPECKLED SUSSEX PEN OF CHICKS

1st, A. & E. Tarbox, 338, 339, 440, 441, 442.

SINGLE COMB BUFF ORPINGTON COCK.

1st, Crescent Poultry Farms, 911; 2d, Hanson Farms, 1; 3d, E. C. Pyles, Union, Ia., 37.

SINGLE COMB BUFF ORPINGTON COCKEREL.

1st, O. M. Brown, Slater, Ia., 397.

SINGLE COMB BUFF ORPINGTON HEN.

1st, Crescent Poultry Farms, 510; 2d and 3d, O. M. Brown, 363, 354.

SINGLE COMB BUFF ORPINGTON PULLET.

1st and 3d, P. L. Scott, Mason City, Ia., 15, 16; 2d, O. M. Brown, 353.

SINGLE COMB BUFF ORPINGTON PEN OF CHICKS.

1st, W. C. Dow, Davenport, Ia., 7, 8, 9, 10, 11.

SINGLE COMB BLACK ORPINGTON COCK.

1st and 2d, O. M. Brown, 388, 395; 3d, Dr. G. H. Humphrey, 21.

SINGLE COMB BLACK ORPINGTON COCKEREL

1st, Dr. G. H. Humphrey, 22; 2d, O. M. Brown, 374; 3d, F. L. Reinhard & Son —.

SINGLE COMB BLACK ORPINGTON HEN.

1st and 2d, Crescent Poultry Farms, 501; 3d, O. M. Brown, 360.

BLACK ORPINGTON PULLET.

1st, Dr. G. H. Humphrey, 20; 2d, F. L. Reinhard & Son, 169; 3d, O. M. Brown, 386.

SINGLE COMB BLACK ORPINGTON PEN OF FOWLS.

1st, Crescent Poultry Farms —.

SINGLE COMB WHITE ORPINGTON COCK.

1st, W. M. Servis, Garden Grove, Ia., 59179; 2d, City View Farms, Des Moines, Ia., 13.

SINGLE COMB WHITE ORPINGTON COCKEREL .

1st, Walker Orpington Yards, What Cheer, Ia., 10; 2d, W. N. Servis, 59168; 3d, W. H. Dunn, Altoona, Ia., 27.

SINGLE COMB WHITE ORPINGTON HEN.

1st, W. N. Servis, 3761; 2d, City View Farm, 73.

SINGLE COMB WHITE ORPINGTON PEN OF CHICKS.

1st, W. N. Servis, 3793, 3769, 3753, 59181, 37923; 2d, Howard Sage, 654, 685, 652, 661, 4; 3d, City View Farm, 17, 16, 18, 19, 20.

SINGLE COMB BLUE ORPINGTON COCK.

1st, Walker Orpington Yards, 1.

SINGLE COMB BLUE ORPINGTON HEN.

1st, Walker Orpington Yards, 2; 2d and 3d, Crescent Poultry Farms, 343, 334.

DARK CORNISH COCK.

1st, Hanson Farms, 27; 2d and 3d, Crescent Poultry Farms, 548, 339.

DARK CORNISH HEN.

1st, Crescent Poultry Farms, 349; 2d and 3d, Hanson Farms, 80, 98.

DARK CORNISH PULLET.

1st, Hanson Farms, 13.

DARK CORNISH PEN OF FOWLS.

1st, Crescent Poultry Farms.

WHITE CORNISH COCK.

1st, Crescent Poultry Farms, 530.

WHITE CORNISH HEN.

1st, Crescent Poultry Farms, 31; 2d and 3d, Hanson Farms, 11, 49.

DUTCH CLASS.

GOLDEN PENCILED HAMBURG HEN.

1st and 2d, Hanson Farms, 99, 94.

SILVER SPANGLED HAMBURG COCK.

1st and 2d, Crescent Poultry Farms, 866, 865.

SILVER SPANGLED HAMBURG HEN.

1st and 2d, Crescent Poultry Farms, 868, 867.

SILVER SPANGLED HAMBURG PULLET.

1st, Crescent Poultry Farms, 157.

WHITE HAMBURG.

Hanson Farms, all awards; leg band Nos. 86, 46, 87.

BLACK HAMBURG.

Crescent Poultry farms, all awards, 348, 188.

MOTTLED HOUDAN COCK.

1st, Crescent Poultry Farms, 322; 2d, Hanson Farms, 42.

MOTTLED HOUDAN COCKEREL.

1st and 2d, Hanson Farms, 40 and 41.

MOTTLED HOUDAN HENS.

1st, Crescent Poultry Farms, 14; 2d, Hanson Farms, 38.

POLISH CLASS.

W. C. BLACK POLISH COCK.

1st, Hanson Farms, 81.

W. C. BLACK POLISH HEN.

1st and 2d, Hanson Farms, 76, G 5087.

BEARDED GOLDEN POLISH.

All awards, Hanson Farms, 6, 79, 35, 91.

BEARDED SILVER POLISH.

Hanson Farms, all awards, 78, 88.

BEARDED WHITE POLISH.

Hanson Farms, all awards, 95, 7, 99, 98, 6, 84.

BUFF LACED POLISH.

Hanson Farms, all awards, 65, 98, 82, 4.

NON-BEARDED GOLDEN POLISH.

Hanson Farms, all awards, 90, 96.

NON-BEARDED SILVER POLISH.

Hanson Farms, all awards, 31, 83, 63, 73, 230.

NON-BEARDED WHITE POLISH.

Hanson Farms, all awards, 93, 34, 56, 39, 89, 87.

ORIENTAL GAMES.

BLACK SUMATRA COCK.

1st, Crescent Poultry Farms, 313; 2d, Hanson Farms, 39.

BLACK SUMATRA HEN.

1st, Crescent Poultry Farms, 174; 2d, Hanson Farms, 51.

BLACK BREASTED RED MALAY.

Hanson Farms, all awards, 520, 92, 99, G 7083, 47.

GAME BANTAMS.

BLACK BREASTED RED GAME COCK.

1st, Mrs. Frank Harris, Des Moines, 183; 2d, Crescent Poultry Farms, 195.

BLACK BREASTED RED GAME COCKEREL.

1st, Mrs. Frank Harris, 2.

BLACK BREASTED RED GAME HEN.

1st, Erle Smiley, Utica, Neb., 59; 2d, Mrs. Frank Harris, 17.

BLACK BREASTED RED GAME PULLETS.

1st and 2d, Mrs. Frank Harris, 3, 4.

BROWN RED GAME HEN.

1st, Erle Smiley, 16.

GOLDEN DUCK WING COCK.

1st and 2d, Erle Smiley, 63, 49.

GOLDEN DUCK WING COCKEREL.

1st and 2d, Erle Smiley, 23, 12.

GOLDEN DUCK WING HEN.

1st and 2d, Erle Smiley, 5, 97.

GOLDEN DUCK WING PULLET.

1st, Erle Smiley, 50; 2d, Erle Smiley, 17.

SILVER DUCK WING COCKEREL.

1st, Crescent Poultry Farms, 152; 2d, Erle Smiley, 83.

SILVER DUCK WING HEN.

1st, Erle Smiley, 2; 2d, Crescent Poultry Farms, 173.

BIRCHEN BANTAMS.

Erle Smiley, all awards, 75, 15, 87, 48, 22.

RED PYLE.

Erle Smiley, all awards, 59, 10, 37, 81.

WHITE GAMES.

Erle Smiley, all awards, 84, 60, 90, 21.

BLACK GAMES BANTAM COCK.

1st, Crescent Poultry Farms, 155.

BLACK GAME BANTAM HEN.

1st, Erle Smiley, 94; 2d, Crescent Poultry Farms, 21.

TURKEYS.

BRONZE TURKEY COCK.

1st, Mrs. Jesse McMahan, Black Water, Mo., 1.

BRONZE TURKEY COCKEREL.

1st and 2d, Mrs. Jesse McMahan, 174, 163.

BRONZE TURKEY HEN.

1st, Mrs. Jesse McMahan, 59.

BUFF TURKEY COCK.

1st, W. F. Lyon, Pleasantville, Ia., 3; 2d, J. U. Walker, Swan, Ia., 1.

BUFF TURKEY HEN.

1st, J. U. Walker, Swan, Ia., 1.

MISCELLANEOUS.

WHITE SILKIES.

All awards, Crescent Poultry Farms, 297, 298.

WHITE SULTAN.

All awards, Hanson Farms.

ANY VARIETY OF CAPONS.

1st, Hanson Poultry Farms, 79; 2d, C. D. Warren, Altoona, Ia., 12; 3d, C. H. Frame, 25.

PIGEONS.

PAIR OF HOMING.

1st and 2d, Crescent Poultry Farms.

PAIR OF FANTAILS.

1st, Crescent Poultry Farms; 2d, Virginia Wagner, Des Moines, Ia.

PAIR OF POUTER PIGEONS.

1st and 2d, Crescent Poultry Farms.

PAIR OF SWALLOW PIGEONS.

1st, F. L. Rinehard & Sons.

PAIR OF TURBET PIGEONS.

1st, F. L. Rinehard.

AGRICULTURAL AWARDS.

SUPERINTENDENT........................F. E. SHELDON, Mount Ayr

CORN.

JUDGE..WILLARD ZELLER

NORTHERN DISTRICT.

Ten Ears Yellow—1st, J. Fred Brunk, Sheldon; 2d, W. N. Wayne, Nashua; 3d, J. W. Bennett, Janesville; 4th, Ellsworth Harker, Spirit Lake; 5th, Isaac Johnson, West Union; 6th, H. U. Arthur & Son, Spirit Lake.

Ten Ears White—1st, R. W. Butterfield, Irvington; 2d, J. Emmet Laughlin, Waukon; 3d, Frank Harker, Milford; 4th, R. B. Brown, Inwood; 5th, H. U. Arthur & Sons; 6th, A. M. Avery, Mason City.

Single Ear Yellow—1st, J. Fred Brunk; 2d, Ellsworth Harker; 3d, H. U. Arthur & Sons; 4th, Isaac Johnson.

Single Ear White—1st, E. R. Maudsley, Burt; 2d, J. Emmet Laughlin; 3d, H. U. Arthur & Sons; 4th, Wm. McArthur, Mason City.

NORTH CENTRAL DISTRICT.

Ten Ears Yellow—1st, H. E. Brown & Sons, Salix; 2d, J. W. Eral, Fort Dodge; 3d, Emanuel Peterson, Harcourt; 4th, John Kramer, Elkader; 5th, W. J. Irving, Webster City; 6th, I. M. Holder, Laurens; 7th, E. B. Glenny, Union; 8th, Eral Bros., Pocahontas.

Ten Ears White—1st, J. W. Eral; 2d, Emanuel Peterson; 3d, Eral Bros.; 4th, C. K. Grier, Monticello; 5th, W. J. Irving; 6th, V. E. Gustafson, Harcourt; 7th, P. M. Peterson; 8th, E. B. Glenny.

Single Ear Yellow—1st, R. W. Wilson, Newell; 2d, P. M. Peterson; 3d, John Kramer; 4th, Eral Bros.; 5th, Emanuel Peterson; 6th, E. B. Glenny.

Single Ear White—1st, C. K. Grier; 2d, Eral Bros.; 3d, W. J. Irving; 4th, P. M. Peterson; 5th, J. W. Eral; 6th, Henry George, West Union.

SOUTH CENTRAL DISTRICT.

Ten Ears Yellow—1st, Thos. Finnigan, Guthrie Center; 2d, John H. Allman, Altoona; 3d, John Justice, Ankeny; 4th, F. E. Proudfit, Altoona; 5th, Victor Felter, Des Moines; 6th, Carl Holden, Williamsburg; 7th, S. L. Farlow, Ankeny; 8th, W. O. Knapp, Guthrie Center; 9th, C. G. Seiberling, Mitchellville; 10th, Roy E. Proudfit, Adelphi.

Ten Ears White—1st, W. F. Otcheck, Grinnell; 2d, W. O. Knapp, Guthrie Center; 3d, John Justice; 4th, Earl Knapp, Monteith; 5th, Paul Kern, Dallas Center; 6th, Matt Baker, Mitchellville; 7th, Mrs. N. J. Harris, Des Moines; 8th, Wm. Danner, Dallas Center; 9th, Victor Felter; 10th, N. Leon Harris, Des Moines.

Single Ear Yellow—1st, E. L. Peterson, Mitchellville; 2d, Matt Baker; 3d, F. E. Proudfitt; 4th, F. J. Horning, Slater; 5th, Carl Holden; 6th, Harry N. Webster, Runnells; 7th, John H. Allman; eighth, John Finnigan; 9th, J. D. Hays, Persia; 10th, W. F. Otcheck.

Single Ear White—1st, John Justice; 2d, W. O. Knapp; 3d, Paul Kern; 4th, W. F. Otcheck; 5th, Earl Knapp; 6th, W. R. Smith; 7th, Mrs. M. J. Harris; 8th, Victor Felter.

SOUTHERN DISTRICT.

Ten Ears Yellow—1st, Elmer Reed, New London; 2d, Wayne W. Polk, Sidney; 3d, J. Leslie Reed, Olds; 4th, Mack Utterback, Sigourney; 5th, Arch Huston, Olds; 6th, Krizer Bros.; 8th, John Nau & Son, Middleton; 9th, J. A. Mason, Carlisle; 10th, Ray Redfern, Yarmouth.

Ten Ears White—1st, Elmer Reed; 2d, W. W. Ettleman, Percival; 3d, Ludard Bengston, Essex; 4th, Wayne W. Polk, Sidney; 5th, Mintle Bros., Glenwood; 6th, Amos Bailey & Son; 7th, J. Leslie Reed; 8th, Lenus Hagglund; 9th, John Nau & Son.

Single Ear Yellow—1st, J. A. Mason; 2d, Arch Huston; 3d, J. Leslie Reed; 4th, Mack Utterback; 5th, Krizer Bros.; 6th, Carl Head, Danville; 7th, Amos Bailey & Son; 8th, Ray Redfern; 9th, S. A. Shetterly, Hartford; 10th, Elmer Reed.

Single Ear White—1st, Ludard Bengston.

NORTHERN AND NORTH CENTRAL DISTRICT.

Ten Ears other than Yellow or White—1st, Emanuel Peterson; 2d, P. M. Peterson; 3d, Ellsworth Harker; 4th, J. W. Bennett; 5th, Henry George.

Single Ear other than Yellow or White—1st, Henry George; 2d, Emanuel Peterson; 3d, Isaac Johnson; 4th, F. A. Van Antwerp, Garrison; 5th, P. M. Peterson.

SOUTH CENTRAL AND SOUTHERN DISTRICT.

Ten Ears other than Yellow or White—First, Guy Coon, Carlisle; 2d, W. F. Otcheck; 3d, P. M. Parson, Carlisle; 4th, J. W. Coon.

Single Ear other than Yellow or White—1st, Wayne W. Polk, Sidney; 2d, W. F. Otcheck; 3d, Ray Redfern; 4th, John Justice; 5th, P. M. Parsons.

SWEEPSTAKES.

Ten Ears Yellow—Thos. Finnigan.
Ten Ears White—Elmer Reed.
Ten Ears other than Yellow or White—Guy Coon.
Single Ear Yellow—J. A. Mason.
Single Ear White—John Justice.
Single Ear other than Yellow or White—Henry George.

GRAND SWEEPSTAKES.

Ten Ears, Any Variety—Thos. Finnigan.

Single Ear, any Variety—J. A. Mason.

SWEET CORN AND POP CORN.

Ten Ears Small Early Sweet Corn—1st, J. L. Todd, Des Moines; 2d, Clifford Cornwell, Ankeny; 3d, Elmer Reed, New London; 4th, J. E. Cornwell, Ankeny; 5th, Lee S. Magill, Atlantic.

Ten Ears Late Sweet Corn—1st, Elmer Reed; 2d, J. T. McCannon, Ames; 3d, Stouder & Douglass, Ames; 4th, Arch Huston; 5th, J. L. Todd, Des Moines.

Ten Ears White Rice Pop Corn—1st, D. W. Bruns; 2d, E. R. Maudsley; 3d, Ray Redfern; 4th, J. L. Todd; 5th, Elmer Reed.

Ten Ears, Any Other Variety, Pop Corn—1st, J. L. Todd, 2d, J. M. Williamson; 3d, E. E. Wilcox; 4th, J. U. Walker; 5th, Elmer Reed.

GRAIN AND SEEDS.

JUDGES........................L. C. BURNETT AND H. L. EICHLING

Winter Wheat—1st, Harry Graves, Williamsburg; 2d, W. F. Otcheck; 3d, Paul Peters; 4th, B. F. Howard, Ankeny; 5th, Robert H. Griffith; 6th, Ed Stuart.

Spring Wheat—1st, C. K. Greer; 2d, Carl Holden; 3d, E. M. Wilson, Panora; 4th, Ray Redfern; 5th, J. E. Fosher, Pleasantville; 6th, W. F. Otcheck.

Small Early Oats—1st, J. M. Maxwell & Son, Crawfordsville; 2d, Fred McCulloch; 3d, O. A. Decker, Adelphi; 4th, Emanuel Peterson; 5th, John Nau & Son; 6th, Carl Holden.

Swedish Type Oats—1st, Harry Graves; 2d. W. F. Otcheck; 3d, Elmer Reed; 4th, Roland Hildreth, Alleman; 5th, W. J. Irving; 6th, Emanuel Peterson.

Large Colored Oats—1st, W. F. Otcheck; 2d, E. E. Wilcox, Rolfe; 3d, J. F. Warner, Bloomfield; 4th, C. E. Malone, Atlantic.

Silver Mine Type Oats—1st, Harry Graves; 2d, W. F. Otcheck; 3d, Ray Redfern; 4th, B. F. Howard; 5th, W. J. Snider; 6th, J. U. Walker.

Rye—1st, Ray Redfern; 2d, J. U. Walker; 3d, E. E. Wilcox; 4th, W. W. Freel.

Barley—1st, W. F. Otcheck; 2d, Fred McCulloch; 3d, E. M. Wilson; 4th, Ray Redfern; 5th, W. W. Freel.

Speltz—1st, E. M. Wilson; 2d, E. E. Wilcox; 3d, W. F. Otcheck.

Buckwheat—1st, J. L. Todd; 2d, Mrs. Geo. M. Grinstead; 3d, Ed Stewart.

Timothy Seed—1st, J. E. Cornwell; 2d, Carl Holden; 3d, W. F. Otcheck; 4th, J. F. Warner; 5th, Ray Redfern.

Red Clover Seed—1st, D. W. Bruns; 2d, A. E. Johnson; 3d, Harry Graves; 4th, C. E. Malone; 5th, Bruns & Sons.

Millet Seed—1st, J. L. Todd; 2d, D. W. Bruns; 3d, C. E. Malone.

Flax Seed—1st, E. E. Wilcox; 2d, J. L. Todd; 3d, C. E. Malone.

GRASS AND FORAGE.

JUDGES........................L. C. BURNETT AND H. L. EICHLING

Timothy Sheaf (hay)—1st, A. L. Plummer; 2d, W. F. Otcheck; 3d, E. E. Wilcox.

Red Top Sheaf (hay)—1st, Carl Holden; 2d, E. E. Wilcox; 3d, Joe Kramer.

Medium Red Clover Sheaf (hay)—1st, Ray Redfern; 2d, Carl Holden; 3d, Elmer Reed.

Mammoth Red Clover Sheaf (hay)—1st, Carl Holden.

Alsike Clover Sheaf (hay)—1st, F. L. Reinhart & Son, Ottumwa; 2d, W. F. Otcheck; 3d, C. E. Malone.

Alfalfa Clover Sheaf (hay)—1st, A. L. Plummer; 2d, John Justice; 3d, W. F. Otcheck; 4th, E. E. Wilcox.

Millet Sheaf (hay)—1st, A. L. Plummer; 2d, W. F. Otcheck; 3d, W. S. Mathews, Danville.

Blue Grass Sheaf (hay)—1st, W. F. Otcheck; 2d, J. U. Walker; 3d, S. H. Stamm, Aurelia.

SHEAF GRAIN.

JUDGES........................L. C. BURNETT AND H. L. EICHLING

Wheat in Straw (spring)—1st, Elmer Reed; 2d, Ray Redfern; 3d, W. F. Otcheck; 4th, John Justice; 5th, M. F. Sims.

Wheat in Straw (winter)—1st, W. F. Otcheck; 2d, Elmer Reed; 3d, C. E. Malone.

Barley in Straw—1st, Ray Redfern; 2d, W. F. Otcheck; 3d, S. H. Stamm.

Oats in Straw (early)—1st, Fred McCulloch; 2d, Ray Redfern; 3d, W. F. Otcheck.

Oats in Straw (late)—1st, W. F. Otcheck; 2d, Fred McCulloch; 3d, S. H. Stamm.

Rye in Straw—1st, Elmer Reed; 2d, W. F. Otcheck; 3d, C. E. Malone.

Flax for Seed—1st, E. M. Wilson; 2d, E. E. Wilcox; 3d, W. F. Otcheck.

Ripe Millet for Seed—1st, E. M. Wilson; 2d, A. H. Bakehouse, Sigourney; 3d, C. E. Malone, Atlantic.

Speltz—1st, W. F. Otcheck; 2d, C. E. Malone; 3d, J. U. Walker.

Timothy Sheaf (for seed)—1st, F. L. Rinehart & Son; 2d, Joe Kramer; 3d, Walter H. Plows, Chariton.

Blue Grass Sheaf (seed)—1st, Ray Redfern; 2d, W. F. Otcheck; 3d, J. U. Walker.

POTATOES.

JUDGE..WALTER H. PLOWS

Early Ohio—1st, W. R. Smith, Dallas Center; 2d, O. Osborn Maxwell; 3d, W. F. Otcheck; 4th, Chas. N. Pink; 5th, Bruns & Son.

Bliss Triumph—1st, A. L. Plummer; 2d, Seister Bros., Des Moines; 3d, James Heathershaw, Des Moines; 4th, J. U. Walker; 5th, Chas. N. Pink.

Irish Cobbler—1st, A. L. Plummer; 2d, Bruns & Sons; 3d, C. H. True, Edgewood; 4th, Wilford McClannahan, Mitchellville; 5th, Seister Bros.

Seneca Beauty—1st, Seister Bros.; 2d, James Heathershaw; 3d, W. F. Otcheck; 4th, Chas. N. Pink; 5th, W. E. Utterback.

Bonanza—1st, Seister Bros.; 2d, Chas. N. Pink; 3d, Jas. Heathershaw; 4th, W. E. Utterback; 5th, Cyrus E. Harvey.

Rural New Yorker—1st, W. E. Utterback; 2d, Seister Bros.; 3d, Chas. N. Pink; 4th, A. L. Plummer; 5th, Stouder & Doublass.

Any Meritorious Variety Not Listed Above—1st, Chas. N. Pink; 2d, O. Osborn; 3d, W. F. Otcheck.

SWEEPSTAKES.

Best Tray Potatoes, Any Variety—W. R. Smith, Dallas Center.

MISCELLANEOUS.

Collection to consist of at Least Ten Varieties—1st, Chas. N. Pink; 2d, W. E. Utterback; 3d, Seister Bros.; 4th, Bruns & Son; 5th, A. L. Plummer.

SWEET POTATOES.

Red Jersey—1st, James Heathershaw; 2d, H. Rollinson, Des Moines; 3d, Chas. N. Pink.

Yellow—1st, Seister Bros.; 2d, Jas. Heathershaw; 3d, G. T. McCannon.

White—1st, H. Rollinson.

Best Tray Each Meritorious Variety not Listed Above—1st, Chas. N. Pink.

FIELD OR STOCK VEGETABLES.

JUDGE..WALTER H. PLOWS

Beets, White Sugar (six specimens)—1st, A. L. Plummer; 2d, James Heathershaw; 3d, H. Rollinson.

Beets, Mangel-Wurtzels (three specimens)—1st, A. L. Plummer; 2d, H. Rollinson; 3d, Jas. Heathershaw.

Beets, Golden Tankard (six specimens)—1st, H. Rollinson; 2d, James Heathershaw; 3d, Seister Bros.

White Carrots for Stock (six specimens)—1st, A. L. Plummer; 2d, Seister Bros.; 3d, Jas. Heathershaw.

Pumpkins, Ripe Field (six specimens)—1st, A. L. Plummer; 2d, Seister Bros.; 3d, Ed Stewart.

Rutabagas, for Stock, Any Variety (six specimens)—1st, A. L. Plummer; 2d, Seister Bros.; 3d, Jas. Heathershaw.

Squash for Stock (three specimens)—1st, Seister Bros.; 2d, Cyrus E. Harvey; 3d, H. Rollinson.

Turnips for Stock (six specimens)—1st, J. U. Walker; 2d, Seister Bros.; 3d, Cyrus E. Harvey.

Largest Pumpkin—1st, A. L. Plummer; 2d, P. S. Brunk; 3d, J. U. Walker.

Largest Squash—1st, J. U. Walker; 2d, H. Rollinson; 3d, Seister Bros.

Largest White Carrot—1st, A. L. Plummer; 2d, Edwin H. Rodell, Des Moines; 3d, James Heathershaw.

Largest Beet, Mangel Wurtzels—1st, H. Rollinson; 2d, A. L. Plummer; 3d, J. U. Walker.

Largest Turnip—1st, J. U. Walker; 2d, Seister Bros.; 3d, H. Rollinson.

VEGETABLE ROOT CROPS.

JUDGE..WALTER H. PLOWS

Red Globe Onions, one dozen—1st, Cyrus E. Harvey; 2d, J. L. Todd; 3d, A. L. Plummer.

White Globe Onions, one dozen—1st, Lee S. Magill; 2d, H. Rollinson; 3d, J. M. Williamson.

Yellow Globe Onions, one dozen—1st, C. E. Malone; 2d, Chas. N. Pink; 3d, Lee S. Magill.

Twelve Largest Onions, Any Variety—1st, Cyrus E. Harvey; 2d, Chas. N. Pink; 3d, E. T. McCannon.

Best Dozen Onions not named above—1st, Cyrus E. Harvey; 2d, Sestier Bros.; 3d, J. L. Todd.

Turnips, one-half dozen—1st, Chas. N. Pink; 2d, Seister Bros.; 3d, H. Rollinson.

Rutabaga Turnips, one-half dozen, yellow flesh—1st, Cyrus E. Harvey; 2d, C. E. Malone; 3d, J. U. Walker.

Parsnips, one-half dozen—1st, Seister Bros.; 2d, A. L. Plummer; 3d, Edwin H. Rodell.

Carrots, for table use, one-half dozen—1st, Mrs. E. W. Freel; 2d, J. T. McCannon; 3d, L. Williams, Pleasantville.

Commercial Sugar Beets—1st, Jas. Heathershaw; 2d, H. Rollinson; 3d, Seister Bros.

Beets for Table Use, one-half dozen—1st, Seister Bros.; 2d, Jas. Heathershaw; 3d, G. T. McCannon.

Vegetable Oyster, one-half dozen—1st, Seister Bros.; 2d, Arthur Wright; 3d, G. T. McCannon.

TABLE VEGETABLES.

JUDGE..WALTER H. PLOWS

One Quart Shelled Ground Cherries—1st, Cyrus E. Harvey; 2d, Seister Bros.; 3d, E. Heydon, Mitchellville.

Beans, Pole Lima, shelled (one quart)—1st, Cyrus E. Harvey; 2d, H. Rollinson; 3d, Seister Bros.

Beans, Henderson's Lima, shelled (one quart)—1st, Cyrus E. Harvey; 2d, A. L. Plummer; 3d, J. T. McCannon.

Beans, White Navy, shelled (one quart)—1st, Seister Bros.; 2d, Cyrus E. Harvey; 3d, Chas. N. Pink.

Cabbage, Early Jersey Wakefield (three heads)—1st, C. E. Malone; 2d, Chas. N. Pink; 3d, Cyrus E. Harvey.

Cabbage, Late Flat (three heads)—1st, Seister Bros.; 2d, Cyrus E. Harvey; 3d, J. L. Todd.

Cabbage, Red (three heads)—1st, W. W. Freel; 2d, Cyrus E. Harvey; 3d, Seister Bros.

Cabbage, Savoy (three heads)—1st, G. T. McCannon; 2d, Cyrus E. Harvey; 3d, H. Rollinson.

Cabbage, three heaviest heads—1st, Jas. Heathershaw; 2d, Seister Bros.; 3d, H. Rollinson.

Cabbage, round, any variety (three heads)—1st, G. T. McCannon; 2d. Jas. Heathershaw; 3d, Seister Bros.

Cauliflower (three heads)—1st, Cyrus E. Harvey; 2d, Mrs. C. W. Viggers, Des Moines; 3d, Seister Bros.

Cucumbers, Ripe, three specimens—1st, Sestier Bros.; 2d, Mrs. H. A. Cornwell; 3d, H. Rollinson.

Cucumbers for Slicing (three specimens)—1st, Seister Bros.; 2d, Jas. Heathershaw; 3d, Edwin H. Rodell.

Celery, Red, roots attached (six stalks)—1st, Seister Bros.; 2d, H. Rollinson; 3d, Jas. Heathershaw.

Celery, White, roots attached (six stalks)—1st, Seister Bros.; 2d, H. Rollinson; 3d, Jas. Heathershaw.

Egg Plant (three specimens)—1st, J. L. Todd; 2d, H. Rollinson; 3d, Seister Bros.

Kohl Rabi (three specimens)—1st, G. T. McCannon; 2d, Seister Bros.; 3d, Mrs. N. Muron, Altoona.

Musk Melons, green fleshed (three specimens)—1st, H. Rollinson; 2d, Chas. N. Pink; 3d, J. L. Todd.

Musk Melons, salmon fleshed (three specimens)—1st, H. Rollinson; 2d, Jas. Heathershaw; 3d, J. L. Todd.

Peppers, green Mango (twelve specimens)—1st, Seister Bros.; 2d, H. Rollinson; 3d, Lee S. Magill.

Peppers, red Mango (twelve specimens)—1st, James Heathershaw; 2d, Seister Bros.; 3d, H. Rollinson.

Peppers, Red (twelve specimens)—1st, James Heathershaw; 2d, H. Rollinson; 3d, Seister Bros.

Peppers, Red Cayenne (twelve specimens)—1st, H. Rollinson; 2d, Jas. Heathershaw; 3d, G. T. McCannon.

Pumpkin, Ripe Sweet (one specimen)—1st, J. U. Walker; 2d, Cyrus E. Harvey; 3d, H. Rollinson.

Rhubarb, for table use (six stalks)—1st, Cyrus E. Harvey; 2d, Lee S. Magill; 3d, Seister Bros.

Squash, Boston Marrow (three specimens)—1st, Seister Bros.; 2d, H. Rollinson; 3d, Cyrus E. Harvey.

Squash, Crook Neck (three specimens)—1st, James Heathershaw; 2d, Seister Bros.; 3d, Cyrus E. Harvey.

Squash, Essex Hybrid (three specimens)—1st, Seister Bros.; 2d, H. Rollinson; 3d, James Heathershaw.

Squash, Hubbard (three specimens)—1st, H. Rollinson; 2d, Seister Bros.; 3d, Chas. N. Pink.

Squash, Marble Head (three specimens)—1st, Cyrus E. Harvey; 2d, Seister Bros.; 3d, H. Rollinson.

Squash, Mammoth (one specimen)—1st, C. W. Packer, Adelphi; 2d, J. U. Walker; 3d, H. Rollinson.

Squash, Sibley (three specimens)—1st, Stouder & Douglass; 2d, Seister Bros.; 3d, Cyrus E. Harvey.

Tomatoes, Red (twelve specimens)—1st, J. L. Todd; 2d, Cyrus E. Harvey; 3d, A. W. Hitchcock.

Tomatoes, Purple (twelve specimens)—1st, Chas. N. Pink; 2d, Seister Bros.; 3d, J. L. Todd.

Tomatoes, Yellow (twelve specimens)—1st, Edwin H. Rodell; 2d, Cyrus E. Harvey; 3d, H. Rollinson.

Tomatoes, Largest, any variety (twelve specimens)—1st, J. L. Todd; 2d, G. W. King, Des Moines; 3d, Chas. N. Pink.

Watermelons (two specimens)—1st, Ed. Stuart, Adelphi; 2d, J. U. Walker; 3d, H. Rollinson.

VEGETABLE DISPLAYS.

JUDGE..WALTER H. PLOWS

Display of Onions to consist of not less than five varieties of five specimens each—1st, H. Rollinson; 2d, Seister Bros.; 3d, James Heathershaw.

Display of Tomatoes to consist of not less than five varieties of five specimens each—1st, Chas. N. Pink; 2d, H. Rollinson; 3d, Seister Bros.

Display of Peppers to consist of not less than five varieties of five specimens each—1st, H. Rollinson; 2d, Seister Bros.; 3d, Jas. Heathershaw.

VEGETABLE SWEEPSTAKES.

JUDGE..WALTER H. PLOWS

1st, Seister Bros.; 2d, H. Rollinson; 3d, Cyrus E. Harvey; 4th, A. L. Plummer; 5th, Chas. N. Pink.

INDIVIDUAL FARM EXHIBITS.

JUDGE..VICTOR FELTER

Exhibit from Farm containing eighty acres or less—1st, C. E. Malone; 2d, A. H. Bakehouse; 3d, J. T. Wasson, Panora; 4th, W. F. Lyon; 5th, Walter H. Plows; 6th, F. L. Rinehart & Son.

Exhibit from Farm containing over eighty acres—1st, W. E. Utterback; 2d, W. F. Otcheck; 3d, Ray Redfern; 4th, E. M. Wilson; 5th, J. U. Walker; 6th, Willis S. Mathews; 7th, J. A. Mason; 8th, Bolick Bros.; 9th, W. W. Freel; 10th, P. M. Peterson.

Exhibit within Polk County—1st, H. A. Justice; 2d, Chas. O. Garrett; 3d, A. L. Plummer; 4th, J. E. Cornwell.

COUNTY EXHIBITS.

JUDGE......................................FRED HETHERSHAW

Northern District—1st, Kossuth, 865.

North Central District—Buena Vista, 869.

South Central District—1st, Jasper County, 939; 2d, Polk County, 932; Greene County, 895.

Southern District—1st, Des Moines County, 934; 2d, Cass County, 911; 3d, Marion County, 899; 4th, Wayne County, 897; 5th, Lucas County, 884.

Sweepstakes for the highest scoring county exhibit—Jasper County.

Sweepstakes, most attractive, best decorated and best arranged exhibit—1st, Jasper County; 2d, Des Moines County; 3d, Polk County; 4th, Wayne County.

FRUIT AWARDS.

SUPERINTENDENT.........................ELMER M. REEVES, Waverly.

APPLES—NORTHERN DISTRICT.

JUDGE..J. H. ALLISON

Collection, not less than twenty varieties or more than fifty—1st, C. H. True, Edgewood; 2d, O. O. Lomen, Decorah; 3d, Isaac Johnson, West Union.

Four varieties, summer—1st, C. H. True; 2d, P. M. Peterson, Cherokee; 3d, O. O. Lomen; 4th, Isaac Johnson.

Six varieties, fall—1st, C. H. True; 2d, O. O. Lomen; 3d, Isaac Johnson; 4th, P. M. Peterson.

Six varieties, winter—1st, C. H. True; 2d, O. O. Lomen; 3d, Isaac Johnson; 4th, P. M. Peterson.

CENTRAL DISTRICT.

JUDGE...J. H. ALLISON

Collection, not less than twenty varieties or more than fifty—1st, E. O. Worth, Mondamin; 2d, F. O. Harrington, Williamsburg; 3d, M. J. Worth, Mondamin; 4th, Clayton Worth, Mondamin.

Four varieties, summer—1st, M. J. Worth; 2d, F. O. Harrington; 3d, E. O. Worth; 4th, Clayton Worth.

Six varieties, fall—1st, E. O. Worth; 2d, F. O. Harrington; 3d, M. J. Worth; 4th, Clayton Worth.

Six varieties, winter—1st, F. O. Harrington; 2d, E. O. Worth; 3d, M. J. Worth; 4th, Clayton Worth.

CAPITAL DISTRICT.

JUDGES..............................R. S. HERRICK AND J. H. ALLISON

Collection, not less than twenty varieties or more than fifty—1st, Cyrus E. Harvey, Altoona; 2d, Robert M. Clark, Mitchellville; 3d, Chas. O. Garrett, Des Moines; 4th, John C. Hol, Des Moines.

Four varieties, summer—1st, Cyrus E. Harvey; 2d, A. L. Garrett, Adelphi; 3d, Chas. O. Garrett; 4th, John C. Hol; 5th, Robert M. Clark.

Six varieties, fall—1st, A. L. Garrett; 2d, Robert M. Clark; 3d, Cyrus E. Harvey; 4th, Chas. O. Garrett; 5th, John C. Hol.

Six varieties, winter—1st, Chas. O. Garrett; 2d, Cyrus E. Harvey; 3d, John C. Hol; 4th, A. L. Garrett; 5th, Robert M. Clark.

SOUTHERN DISTRICT.

JUDGES............................C. C. WIGGANS AND R. S. HERRICK

Collection, not less than twenty varieties or more than fifty—1st, Thos. Enright, Patterson; 2d, A. R. Soder, Hartford; 3d, K. R. Gwimm, Hartford; 4th, W. W. Gwimm, Hartford.

Four varieties, summer—1st, Thos. Enright; 2d, A. R. Soder; 3d, W. W. Gwimm; 4th, J. F. Wellons, Indianola; 5th, K. R. Gwimm.

Six varieties, fall—1st, A. R. Soder; 2d, W. W. Gwimm; 3d, Thos. Enright; 4th, J. F. Wellons.

Six varieties, winter—1st, Thos. Enright; 2d, A. R. Soder; 3d, W. W. Gwimm; 4th, J. F. Wellons; 5th, K. R. Gwimm.

HOME ORCHARD COLLECTION.

JUDGE...J. H. ALLISON

NORTHERN DISTRICT.

1st, C. H. True; 2d, O. O. Lomen; 3d, Isaac Johnson; 4th, P. M. Peterson.

CENTRAL DISTRICT.

1st, F. O. Harrington; 2d, M. J. Worth; 3d, E. O. Worth; 4th, Clayton Worth

CAPITAL DISTRICT.

1st, Robert M. Clark; 2d, Chas. O. Garrett; 3d, Cyrus E. Harvey; 4th, A. L. Garrett; 5th, John C. Hol.

SOUTHERN DISTRICT.

1st, Thos. Enright; 2d, A. R. Soder; 3d, J. F. Wellons; 4th, W. W. Gwimm; 5th, K. R. Gwimm.

PACKAGE COMMERCIAL APPLES.

JUDGE...J. H. ALLISON

NORTHERN DISTRICT.

1st, C. H. True on two varieties; O. O. Lomen on one variety; E. M. Peterson on two varieties.

2d, O. O. Lomen on three varieties; C. H. True on one variety; Isaac Johnson on one variety.

3d, O. O. Lomen, on one variety.

4th, C. H. True, on one variety.

CENTRAL DISTRICT.

1st, E. O. Worth, on six varieties; M. J. Worth, on three varieties; Clayton Worth, on one variety.

2d, M. J. Worth, on three varieties; E. O. Worth, on four varieties; Clayton Worth on three varieties.

3d, Clayton Worth, on six varieties; M. J. Worth, on three varieties.

CAPITAL DISTRICT.

1st, Cyrus E. Harvey, on five varieties; Robert M. Clark on five varieties.

2d, John C. Hol, on two varieties; A. L. Garrett, on one variety; Robert M. Clark, on one variety; Chas. O. Garrett, on three varieties; Cyrus E. Harvey, on two varieties.

3d, Robert M. Clark, on two varieties; Chas. O. Garrett, on two varieties; John C. Hol, on one variety; Cyrus E. Harvey, on two varieties.

4th, Chas. O. Garrett, on one variety; A. L. Garrett, on one variety; Cyrus E. Harvey, on one variety; John C. Hol, on one variety.

SOUTHERN DISTRICT.

1st, A. R. Soder, on three varieties; W. W. Gwimm, on four varieties; C. D. Wright, on one variety.

2d, W. W. Gwimm ,on three varieties; A. R. Soder, on two varieties; C. D. Wright, on one variety.

Third, J. F. Wellons, on two varieties; A. R. Soder, on one variety.

APPLES STORED FROM PREVIOUS YEAR.

Best box of apples stored from last year's crop—1st, Chas. O. Garrett; 2d, A. L. Garrett; 3d, A. R. Soder.

Next best plate of each of five varieties stored as above with method of storing stated, premium on each variety—1st, Chas. O. Garrett, on four varieties; A. L. Garrett, on one variety.

2d, A. L. Garrett, on four varieties; Chas. O. Garrett on one variety.

3d, A. R. Soder on five varieties.

UNNAMED SEEDLING APPLES.

JUDGE...S. A. BEACH

Six specimens to constitute plate—Cyrus E. Harvey.

Best exhibit seedling apples—1st, Isaac Johnson; 2d, Cyrus E. Harvey; 3d, O. O. Lomen; 4th, J. T. Wellons.

PLATES.

NORTHERN DISTRICT.

JUDGE...S. A. BEACH

1st, C. S. Halderman, Hartford, on two varieties; C. H. True, on seventeen varieties; O. O. Lomen, on eight varieties; Isaac Johnson, on two varieties; P. M. Peterson, on one variety.

2d, P. M. Peterson, on five varieties; C. H. True, on five varieties; Isaac Johnson, on nine varieties; O. O. Lomen, on nine varieties.

3d, C. H. True, on six varieties; Isaac Johnson, on thirteen varieties; P. M. Peterson, on five varieties; O. O. Lomen, on five varieties.

CENTRAL DISTRICT.

JUDGES.............................J. H. ALLISON AND R. S. HERRICK

First, M. J. Worth, on twelve varieties; F. O. Harrington, on six varieties; Clayton Worth, on three varieties; E. O. Worth, on seven varieties.

2d, E. O. Worth, on thirteen varieties; F. O. Harrington, on five varieties; M. J. Worth, on seven varieties; Clayton Worth, on two varieties.

3d, F. O. Harrington, on twelve varieties; M. J. Worth, on seven varieties; E. O. Worth, on seven varieties; Clayton Worth, on one variety.

CAPITAL DISTRICT.

JUDGE...C. C. WIGGANS

1st, Cyrus E. Harvey, on eight varieties; A. L. Garrett, on four varieties; Ella Plummer, Des Moines, on one variety; Chas. O. Garrett, on nine varieties; Robert M. Clark, on five varieties; John C. Hol, on one variety.

2d, Chas. O. Garrett, on five varieties; John C. Hol, on five varieties; Cyrus E. Harvey, on eight varieties; A. L. Garrett, on six varieties; Robert M. Clark, on four varieties.

3d, A. L. Garrett, on six varieties; Robert M. Clark, on two varieties; John C. Hol, on seven varieties; Chas. O. Garrett, on seven varieties; Cyrus E. Harvey, on four varieties.

SOUTHERN DISTRICT.

JUDGE...C. C. WIGGANS

1st, Thos. Enright, on nine varieties; A. R. Soder, on nine varieties; W. W. Gwimm, on six varieties; J. F. Wellons, on two varieties; A. R. Gwimm, on two varieties.

2d, A. R. Gwimm, on six varieties; A. R. Soder, on nine varieties; W. W. Gwimm, on seven varieties; J. F. Wellons, on three varieties; Thos. Enright, on three varieties.

3d, W. W. Gwimm on six varieties; J. F. Wellons, on nine varieties; A. R. Soder, on three varieties; K. R. Gwimm, on five varieties; Thos. Enright, on two varieties.

CRABS.

JUDGE...C. C. WIGGANS

NORTHERN DISTRICT.

1st, P. M. Peterson, on 3 varieties; C. H. True, on two varieties; Isaac Johnson, on one variety; O. O. Lomen, on one variety.

2d, C. H. True, on four varieties; P. M. Peterson, on one variety; Isaac Johnson, on one variety.

Third, W. W. Gwimm, on three varieties; O. O. Lomen, on one variety.

CENTRAL DISTRICT.

1st, F. O. Harrington, on four varieties; M. J. Worth, on three varieties; E. O. Worth, on one variety.

2d, M. J. Worth, on five varieties; Clayton Worth, on three varieties.

3d, P. M. Peterson, on seven varieties; F. O. Harrington, on one variety.

CAPITAL DISTRICT.

1st, Cyrus E. Harvey, on five varieties; John C. Hol, on three varieties; Chas. Garrett, on one variety.

2d, John C. Hol, on two varieties; Cyrus E. Harvey, on four varieties; Robert M. Clark, on one variety; Chas. O. Garrett, on one variety.

3d, John C. Hol, on three varieties; Chas. O. Garrett, on three varieties.

SOUTHERN.

Thos. Enright, on four varieties; J. T. Wellons, on two varieties; E. R. Soder, on two varieties.

2d, J. T. Wellons, on three varieties; Thos. Enright, on two varieties.

3d, A. R. Soder, on one variety; W. W. Gwimm, on one variety.

NATIVE OR HYBRID CRABS.

NORTHERN DISTRICT.

1st, P. M. Peterson.

PLATE DISPLAY.

JUDGES..............................J. H. ALLISON AND R. S. HERRICK

Best ten plates Wealthy—1st, Robert M. Clark; 2d, Chas. O. Garrett; 3d, Cyrus E. Harvey; 4th, J. F. Wellons; 5th, John C. Hol.

Best ten plate exhibit, each of three other varieties to be selected. Jonathan—1st, Chas. O. Garrett; 2d, Cyrus E. Harvey; 3d, John C. Hol; 4th, Robert M. Clark; 5th, O. O. Lomen.

Grimes—1st, Robert M. Clark; 2d, Chas. O. Garrett; 3d, Cyrus E. Harvey; 4th, O. O. Lomen; 5th, John C. Hol.

N. W. Greening—1st, Robert M. Clark; 2d, Cyrus E. Harvey; 3d, Chas. O. Garrett; 4th, John C. Hol; 5th, J. W. Patterson, Des Moines.

Sweepstakes—1st, John C. Hol, on one variety; Robert M. Clark, on one variety; M. J. Worth, on two varieties; F. O. Harrington, on two varieties; E. O. Worth, on two varieties; Cyrus E. Harvey, on one variety.

2d, A. R. Soder, on three varieties; E. O. Worth, on two varieties; Chas. O. Garrett, on one variety; Cyrus E. Harvey, on one variety; M. J. Worth, on one variety; M. F. Wellons, on one variety; F. O. Harrington, on one variety.

3d, Clayton Worth, on three varieties; Cyrus E. Harvey, on two varieties; Chas. O. Garrett, on one variety; J. F. Wellons, on one variety; Robert M. Clark, on one variety.

4th, E. O. Worth, on three varieties; Chas. O. Garrett, on one variety; Robert M. Clark, on one variety; M. J. Worth, on two varieties; Thos. Enright, on one variety; Cyrus E. Harvey, on one variety.

5th, Robert M. Clark, on two varieties; Thos. Enright, on two varieties; E. O. Worth, on two varieties; Chas. O. Garrett, on one variety; M. J. Worth, on one variety.

DISPLAY OF FRUITS.

JUDGES............................J. S. ALLISON AND R. S. HERRICK

1st, Cyrus E. Harvey; 2d, Chas. O. Garrett; 3d, John C. Hol; 4th, E. O. Worth; 5th, J. T. Wellons.

ORNAMENTAL DESIGNS IN FRUIT.

JUDGE..WESLEY GREEN

Best and most artistic basket of fruit—1st, Mrs. Frank Stuart, 82%; 2d, Mrs. O. A. Decker, Adelphi, 81%; 3d, Cyrus E. Harvey, 80½%; 4th, John C. Hol, 80%; Alma Grinstead, 79%, 6th, Hazel Plummer, Des Moines, 78%; 7th, Chas. O. Garrett, 77½%; 8th, Cyrus E. Harvey, 77%; 9th, Cyrus E. Harvey, 76%; 10th, Mrs. John Justice, Ankeny; 75½%; 11th, Ella Plummer, 75%; 12th, A. R. Soder, 74%.

PEARS.

JUDGE..J. H. ALLISON

Collection of pears, not less than fifteen varieties—1st, B. A. Mathews, Knoxville; 2d. M. J. Worth; 3d, E. O. Worth.

Plates, any worthy variety—1st, B. A. Mathews, on five varieties; E. O. Worth, on five varieties; M. J. Worth, on one variety; Cyrus E. Harvey, on three varieties; John C. Hol, on one variety.

2d, John C. Hol, on two varieties; B. A. Mathews, on three varieties; M. J. Worth, on four varieties; E. O. Worth, on one variety; Cyrus E. Harvey, on one variety.

Largest and best collection per plate distinct varieties—1st, B. A. Mathews; 2d, M. J. Worth.

GRAPES.

JUDGE...J. H. ALLISON

Best and largest collection of grapes (four bunches to plate)—1st, John C. Hol; 2d, Chas. O. Garrett; 3d, Cyrus E. Harvey.

Campbell's Early—1st, F. O. Harrington; 2d, John C. Hol.

Pocklington—1st, Chas. O. Garrett; 2d, John C. Hol.

Concord—1st, Cyrus E. Harvey; 2d, John C. Hol.

Worden—1st, W. A. Pickering, Des Moines; 2d, John C. Hol.

Delaware—1st, Chas. O. Garrett; 2d, John C. Hol.

Eaton—1st, John C. Hol.

Woodruff Red—1st, F. O. Harrington; 2d, John C. Hol.

Wyoming Red—1st, Cyrus E. Harvey; 2d, John C. Hol.

Duchess—1st, Cyrus E. Harvey; Chas. O. Garrett.

Moore's Early—1st, Cyrus E. Harvey; Chas. O. Garrett.

Moore's Diamond—1st, John C. Hol; 2d, F. O. Harrington.

Niagara—1st, John C. Hol; 2d, W. A. Pickering.

Agawan—1st, Chas. O. Garrett; 2d, John C. Hol.

Brighton—1st, F. O. Harrington; 2d, John C. Hol.

Four bunches of grapes of varieties not named above, limited to five varieties—1st, F. O. Harrington, on three varieties; Cyrus E. Harvey, on one variety; John C. Hol, on one variety.

2d, John C. Hol, on two varieties; O. O. Lomen, on one variety; Chas. O. Garrett, on one variety; Cyrus E. Harvey, on one variety.

Four bunches most promising seedling grapes—1st, Cyrus E. Harvey.

PLUMS.

JUDGE...S. A. BEACH

NORTHERN DISTRICT.

Largest and best exhibit of plums, not less than fifteen varieties—1st, O. O. Lomen; 2d, Isaac Johnson.

PLATES.

Hawkeye—1st, Isaac Johnson; 2d, O. O. Lomen.

Wolf—1st, Isaac Johnson; 2d, O. O. Lomen.

Wyant—1st, O. O. Lomen; 2d, Isaac Johnson.

Miner—1st, O. O. Lomen; 2d, Isaac Johnson.

Hunt—1st, Isaac Johnson.

Surprise—1st, O. O. Lomen.

Lombard—1st, O. O. Lomen; 2d, Isaac Johnson.

Best plate domestic plums—1st, Isaac Johnson; 2d, O. O. Lomen.

Best plate not named on list not exceeding five varieties—1st, C. H. True, on one variety; Isaac Johnson, on three varieties; O. O. Lomen, on one variety.

2d, Isaac Johnson, on two varieties; O. O. Lomen, on three varieties.

Best domestic plums, not less than five varieties—1st, Isaac Johnson; 2d, O. O. Lomen.

SOUTHERN DISTRICT.

JUDGE...S. A. BEACH

Largest and best exhibit of plums, not less than fifteen varieties—1st, Cyrus E. Harvey; 2d, Chas. O. Garrett; 3d, J. P. Wellons.

PLATES.

De Soto—1st, Chas. O. Garrett.

Forest's Garden—1st, Chas. O. Garrett; 2d, Cyrus E. Harvey.

Hawkeye—1st, Chas. O. Garrett; 2d, Cyrus E. Harvey.

Wolf—1st, Chas. O. Garrett; 2d, Cyrus E. Harvey.

Wyant—1st, Cyrus E. Harvey; 2d, Chas. O. Garrett.

Stoddard—1st, Chas. O. Garrett; 2d, J. T. Wellons.

Miner—1st, Cyrus E. Harvey; 2d, Chas. O. Garrett.

Wild Goose—1st, Cyrus E. Harvey; 2d, J. T. Wellons.

Hunt—1st, Chas. O. Garrett.

Surprise—1st, Cyrus E. Harvey; 2d, Chas. O. Garrett.

Terry—1st, Cyrus E. Harvey; 2d, F. O. Harrington.

Lombard—1st, Cyrus E. Harvey; 2d, J. T. Wellons.

Best plate of domestic plums—1st, Cyrus E. Harvey; 2d, J. T. Wellons; 3d, Chas. O. Garrett.

Best plate not named on list not exceeding five varieties—1st, J. T. Wellons, one one variety; Chas. O. Garrett, on two varieties; Cyrus E. Harvey, on two varieties.

2d, Cyrus E. Harvey, on three varieties; Chas. O. Garrett, on two varieties.

Best exhibit domestic plums, not less than five varieties—1st, Cyrus E. Harvey.

Best exhibit Japan Plums, not less than three varieties—1st, Cyrus E. Harvey.

Best plate Japan or Hybrid plums, not entered in collection—1st, Cyrus E. Harvey; 2d, Chas. O. Garrett.

NATIVE PLUM SEEDLINGS.

1st, A. R. Soder; 2d, Cyrus E. Harvey; 3d, M. J. Worth; 4th, John C. Hol.

NATIVE FRUITS.

PLATES.

Elderberry—1st, John C. Hol; 2d, S. D. Whinnery, Des Moines.

Juneberry—1st, Cyrus E. Harvey.

Fresh Strawberry progressive—1st, John C. Hol; 2d, Cyrus E. Harvey.

Fresh Strawberries, other varieties—1st, W. A. Pickering; 2d, Cyrus E. Harvey.

Plates of each other native fruits—1st, J. T. Wellons, on three varieties; S. D. Whinnery, on two varieties.

2d, Cyrus E. Harvey, on five varieties; John C. Hol, on one variety; S. D. Whinnery, on two varieties.

EDIBLE NUTS.

Black Walnuts—1st, W. A. Pickering; 2d, Chas. O. Garrett.

White Walnut or Butternut—1st, W. A. Pickering; 2d, J. T. Wellons.

Shell Bark Hickory Nuts—1st, Cyrus E. Harvey; 2d, S. D. Whinnery.

Hazel Nuts—1st, S. D. Whinnery; J. T. Wellons.

Sweet Chestnut—1st, J. T. Wellons; 2d, John C. Hol.

Japan Chestnut—2d, John C. Hol.

Hybrid Chestnut—2d, John C. Hol.

Peanuts—1st, J. T. Wellons; 2d, John C. Hol.

Each other nuts grown in Iowa—1st, Cyrus E. Harvey; 2d, John C. Hol.

Best Collection of Nuts—1st, Cyrus E. Harvey; 2d, John C. Hol.

Best Collection of Native Fruits—1st, J. T. Wellons; 2d, Cyrus E. Harvey.

THE LIVE STOCK SHOW AT THE IOWA STATE FAIR.

From the Breeder's Gazette.

It happened as expected. Indeed it always happens so in Iowa. Commanding the field at the opening of the campaign, officered by experienced fair managers personally in close touch with the stock breeding industry, considerate in providing accommodations and enterprising, liberal and just in treating with exhibitors, quite naturally the Des Moines show attracts to its stock department leading exhibitors from a wide stretch of country. And with the richness of Iowa soil and the intelligence and industry of its tillers exactly such an aggregation of products and implements and farm and farmstead accessories as is annually gathered within the walls of this exhibition would be expected. Facing the untoward conditions of war the Iowa farmer believed in preparing himself for it by study in the greatest school of farm and home instruction a state ever instituted. It therefore fell out that at the end of Wednesday of last week the total attendance had exceeded that of last year by nearly 35,000 people and the total receipts by nearly $30,000; and the show was "going strong" down the home stretch. Measuring success with such tangible standards, the 1917 Iowa State Fair wrote its record most agreeably.

Agricultural Iowa awaits merely the climax of its seasonal activities. Last year Dame Nature turned a frowning face and sent the blasting breath of the frost king over the waving fields of maize on Aug. 31, and the resultant calamity was great. Again the possibility of such a fate is faced, as the corn lingers belatedly, having failed of encouragement the past two weeks by any forcing heat to hasten it toward maturity. But the Iowa farmer sees by faith feedlots filled with cattle, hogs and sheep, and cribs bursting with their garnered ears of golden corn. The state can only wait, as all opportunities for cultural stimulating of maturity are past. The time of average frost is yet three weeks distant, and the bulk of the crop will need all of that leniency. Meanwhile ideal harvest weather has attended the small crops and barring some dry spots in the central south Iowa has probably never come to the final harvest with such a wealth of yield from the bosom of Mother Earth. The fair gave ample evidence, supported by the oral testimony of those who came to see and learn.

In material development the fair has little more than marked time. War's disturbance caused legislators to deny the request for a $90,000 appropriation for a needed new cattle barn, and the compromise offer of $25,000 was declined good naturedly with the statement that it could not be economically expended, and that it would be the part of wisdom to wait until the full sum would in good conscience be tendered by the legislature. From the $20,000 given for maintenance during the next two years about 19 acres, most of which already lie within the fence, were bought and a new automobile entrance opened near the Rock Island station. This land cost $12,000. An extensive re-roofing and painting campaign was executed, and the appearance of a number of the buildings materially freshened. With an addition of 48 by 64 to the poultry building the outlay ceased. A cattle barn and a dairy building are among the immediate needs of the grounds.

It was the banner year for sheep in the magnificent new sheep barn. Every pen was occupied, and despite the presence of a number of sale sheep, which readily found new homes, the quality was gratifyingly high, provoking unqualified compliment from the judges. Swine have rarely, if ever, excelled in numbers, and certainly not in merit. All available accommodations were occupied, and never a vision of $2.50 corn could be conjured up from the ripened artistic finish of these porkers. Each breed apparently finds part in this comment on the superior show condition in which entries were presented. Cattle filled the barns and some of the old sheep sheds, but supplementary shelter tents were not required as last year. The leading breeds were capitally shown, entries coming from a wide stretch of country, but the dairy section showed some numerically weak spots. Horses have been in view in greater totals but the Iowa breeder of a stallion or two and a few mares is making himself increasingly prominent on the prize lists, proving that the investment in this educational institution is attaining that whereunto it has been sent. Harness horses were in somewhat light entry for the night shows, but creditable in quality and enough in numbers to lend interest. The saddle horses always hold high places in importance and pleasure at Des Moines. The sum of it is that in view of the hesitancy of the stock industry, the abnormal conditions consequent on war and the discouragement in some quarters of such exhibitions this fall, the Iowa State Fair realized quite high anticipations in its stock department.

Conservation was the keynote up on the hill. In the women's building it shared place with the manifold and practical forms of education of peculiar appeal to the women and girls. The baby health contest, at the basis of all conservation, was more popular than ever, holding entries which had materially increased to 435. The boys' and girls' clubs made lasting impression on the fair through their food preservation demonstration. A speaker from Washington in pursuance of the systematic campaign sought to make clear the necessity for the utmost utilization of the products of the land, and alongside were illustrated the means of giving practical form to such exhortation. The agricultural college changed its customary appeals to the attention. Whereas heretofore most interesting indications have been given of the lines of instruction followed at the college, now almost the entire exhibit in its building was devoted to the means of preserving farm production. In apparent contrast to this dominant idea and yet fundamental to it, the central display suggested tangibly the various labor-saving forms which the farm-generated electric current may be readily made to take. Farm lighting plants are in plentiful supply at reasonable prices, and a vast development looking toward comfort and conservation of the taxed strength of farm women may be expected from the skillful inventions which harness this wonderful force and lead it captive for beneficent uses on the farm.

A special platform appeal was made to leaders in county uplift work in a meeting held on Monday morning in the tent provided for public assembly. Extension Director Bliss presented Wilbur W. Marsh as chairman, a man of national eminence in political life, in the dairy and dairy cattle industry, and in council of defense work, and his introductory comments held no less pith and importance than the eloquent address of Gov. Harding, Duncan Marshall, minister of agriculture in Alberta, and J. D. Deems, the representative of the Food Administration in Iowa. The statements of the obligations of loyal citizens could not be more clearly set forth than was done by the governor, and the exposition of the underlying causes of the world's conflict could not be more stirring and eloquent than that given by the gifted leader of Alberta's agricultural forces, while the practical application was earnestly driven home by Mr. Deems.

And there is plenty to conserve from the Iowa farm this year. The huge horn of plenty, the spectacular feature of the Panama-Pacific agricultural hall, made its second appearance as the centerpiece of the agricultural building, now completely redeemed from the proselyting booths of other states and countries and devoted to amazing displays of county and individual farm resources, worked out with such artistic wizardy as to make laggard the steps of the wayfarer through this building. Fruits were in abundant evidence and grains and vegetables, but while Iowa is a state flowing with honey, the milk was noticeably absent. A dairy building is badly needed, but the dairy department emphasized its existence this year by a limited display of products in its refrigerator, in which was presented a fac-simile in golden butter of the first creamery builded in Iowa, in 1872, by a pioneer of vision recently gone to his reward after life's journey had approached the century mark.

The state institutions, penal, reformatory and charitable, brought home visually the humanitarian work done under state auspices to make society safe and to lighten the burdens of the unfortunate. Under a tent a lot of creditable stock from such institutions was on view and under other canvas a very impressive exhibition of the handiwork of inmates, ranging from lace-making up through all the forms of needle and loom work to brick and tile burning. The public schools made their accustomed display, lending crowning touch to the superstructure of this fair which rests solidly on its educational function in state life.

Never have so many exhibitors of machinery knocked at the doors of this institution. Significant shiftings of farm interest are mirrored in these exhibits. Increased space was demanded for the exhibit of automobiles, and the accessories were moved over into the machinery hall. Formerly buggies had occupied two long rows in this shed, numbering into the hundreds. Now six buggies were on view. The space formerly filled by them was taken by light trucks, truck bodies, trailers, rubber tires, and motor car accessories. Consistent with former years the appeal in this building is made to the Iowa farmer for the improvement of home and barn, and the lightening of labor for himself and his family. Varied were the exhibits along this line, including house lighting, heating and ventilation, dairy equipment, and the application of power to housework. The open air exhibit of machinery was comprehensive, illustrating the marvelous strides invention has made toward solving the perennial, perplexing and burdensome farm labor problem. The tractors and the trucks were there, and the attachments which make trucks and tractors of automobiles, and the cultural implements conveniently harnessed to gas power were numerously in evidence. A liberal education in farm fittings and appliances could be acquired by the studious man at Des Moines. The silo city grows, as also grow the sales of this preservative receptacle of stock foods—never so badly needed on every cornbelt farm as this fall.

Attractions in plenty were afforded. The shows are kept as clean as such shows can be, but their superfluity on such a fair ground, with its attractions of fast racing and horse shows in front of the grandstand, and a thrilling illustration of modern war at night, seems plain. Verily the devoted managers of the Iowa State Fair labored diligently and entered this year into their abundant reward.

THE CATTLE SECTION.

In this banner year of trade in purebred beef cattle it was to be expected that a great showing would be made at the principal fairs. Some disappointment was therefore expressed when the judging began with only a few of the older bulls in evidence. However, the barns were filled with almost as many cattle as ever, so something was certain to happen. It was the show of calves and yearlings for which every breeder seemed prepared. Those classes were large, and they were good. The futurity lists drew some of these numerous entries; trade conditions accounted for others. Pedigree beef cattle have been selling like hot cakes and breeders have closely disposed of their older animals excepting those kept on maintenance rations in the breeding ranks. The three principal beef breeds did justice to their showring reputations. There was only one herd of Galloways and two herds of Polled Durhams, while Red Polls were not largely represented.

Beef steers made the best exhibition they have ever staged here. This was due to the boys' baby beef contest. Steers fed by boys in this contest and judged by Prof. W. H. Pew, Ames, Ia., in a special class, were freely entered in the open classes. There they won their full share of money and added much to the glory of their youthful feeders. This baby beef contest has aroused the enthusiasm of farm boys all over the state. Each boy kept account of the feed costs and these data appeared on placards over the stalls of their steers. In moulding the thought and developing the skill of the Iowa boys this feeding and showing contest must be rated as one of the princial agricultural events of the year in the state. It will mean additional cattle feeders in Iowa years hence. Incidentally it was clearly demonstrated that a very small boy can become a very expert cattle feeder. The enterprise enlists an intense interest and that develops skill and seasons the judgment. It makes manly boys.

THE SHORTHORNS.

Famous Shorthorn herds met in the arena to match mainly their younger animals. Iowa, Wisconsin, Nebraska and Missouri contributed most of the herds. The discussion about the ringside centered around the relative merits of different sires and of their sons in the breeding ranks. The study of blood lines and of family relationships in general among Shorthorn breeders. Several men were encountered searching for suitable sires to use on the choicest of females. Splendid material to pick from was presented in the yearling and calf classes, youngsters of the most popular families and sired by bulls that have already created breed history and individual reputations. The classes of young heifers were equally impressive. There was plenty of foundation material in sight to supply a large and exceedingly exacting demand.

The big responsibility of ranging the entries in line for their many prizes was laid upon Wm. Hartnett, Muskogee, Okla. There was much favorable comment about his work. He executed a hard task with credit to himself and the breed.

THE BULLS.

A line of half a dozen aged bulls had as head the big white Cumberland Standard shown by Wm. Herkelmann. He was brought out carrying plenty of flesh to show that he is a meatmaker of the first rank. A smoother back and very pleasing shape and quality all over are possessed by the second bull, the roan Eastlawn's Champion, owned by Toyne. A larger and very thick red-and-white bull Maxwalton Amateur came in third for Kennedy, beating Carpenter & Carpenter's imp. Lord Cullen.

There were five two-year-olds, and a real fashionable quality stamp was found for the first place. This roan, Violet's Dale, of Rees & Son, is one of the smooth straight-lined cattle popular with discriminating breeders. His finish is worn without a ripple on the surface, and withal he is a vigorous bull, and a suitable senior champion. The white Bellows bull Parkdale Rex is larger and very thick everywhere, with great hindquarters and a thoroughly covered back. He was followed in line by Rookwood Farm's white Knight Avon 3d. This son of Count Avon is not fat but his pleasing character, well-knit form and hide like satin bespeak a genuine show bull. A thick one came fourth for Rapp.

Numbers began to increase in the senior yearling class, and there the "bell ringer" of the bull show was found in the roan son of Villager named Villager's Coronet, shown by Uppermill Farm. He is very close to the ground, straight of line above and below, meaty over the top, bulging at the thighs and smooth everywhere, and with his beefiness he possesses a masculine front. The exceedingly smooth roan-and-white Dale Cumberland carried off the red ribbon for Miller. The third bull, the white Royal Victor, was scarcely so smoothly fleshed.

Fourteen junior yearlings were topped successfully by Bellows Bros.' roan King Baron by Parkdale Baron. He is large for the age and very level, with a great heart girth and beautiful quality. The roan McDermott entry Cumberland Marshal 4th is particularly low-set and long, packing lots of beef into small space. Kane's red Proud Dale looks young but he is exceedingly smoothly fleshed. The fourth one is also red. This Omega Senet, shown by Rapp, is a mossy-haired small, meaty bull and yet is not fat. Some larger ones followed in line.

And still the numbers grew. The senior bull calves fairly crowded the ring with their forty-five head, constituting the open class and the futurity show. A pleasing Anoka pair of roans won the blue and red ribbons. The darker one Anoka Champion by Sultan Stamp is accounted about the best ever produced at Anoka. He has much width, very smoothly-laid thick flesh and a perfectly straight topline. In the latter respect he excels Merry Stamp. These two are somewhat lower to the ground than the third roan Cumberland Marshal 5th, and they have a superior quality of flesh. The fourth one Supreme Choice is also roan, and is smaller, very thick in thighs and covered with a mossy coat. A wealth of promise developed throughout the prize-list.

Eleven junior calves found leadership in Pritchard's small nugget of beef Dale Viscount, done up in a roan hide. It would be hard to put more weight into so young a bull, and his bulging thighs bespeak a wealth of muscle mixed with the fat. He is smooth as an egg and carries a well-bred head. A growthier roan came second for Toyne, sandwiched in ahead of a very neat white Anoka entry. The Bellows calf is a little higher set and came fourth.

THE COWS.

Eleven aged cows with their little calves portrayed the matronly qualities of the red, white and roan. The sensation of this class was the queenly roan Maxwalton Queen which easily won pride of place for Carpenter & Carpenter. She is big, wide, very level and very smooth from end to end, and has a motherly front and nurses a young calf. She is wonderfully sappy and fresh for a five-year-old, and a credit to the female-siring reputation of Avondale. Toyne's roan Bonnie Belle 14th is similarly thick but not so smooth, although a year younger, and his roan Village Lassie that won third carries a lot of beef, especially over the back and loin. She is smoother of rump than the big red Baroness Lady 7th shown by Kennedy in fourth place.

A highly attractive imported roan with accurate lines, very thick covering and ample hindquarters won the blue ribbon for Bellows among the two-year-olds. She has abundant quality but less scale than the second-prize roan Lady Violet 8th shown by Rees, which has remarkable spring of rib. McDermott had one of his thick Cumberland Marshal heifers in third. She is white and already has a calf.

Among seventeen senior yearlings there were three mossy roans sorted out for the higher places. The Kennedy entry Miss Lovely possesses distinctive character and her long rump and square corners set off to advantage an altogether pleasing beef form. The Prather heifer Village Blossom 8th that followed is similarly thick-fleshed and very smooth. She beats the Carpenter & Carpenter entry especially in smoothness over the rump. The fourth heifer is also a roan. She does not show so much quality as the first three but carries a world of thick flesh.

About twenty-five junior yearling heifers made a strong class. The growthy meaty roan Choice Mayflower annexed a blue ribbon for Miller. It was a close contest because the Bellows roan which came next is sweeter of face, although not so near perfect in form. Another heifer of character, and from the same herd and by the same sire Radium, is the Bellows entry Clara 70th, much like her mate, only not quite so smooth. She won third, and a big roan came fourth.

There were thirty-four senior heifer calves, making an excellent futurity class in which four outstanding roans secured the principal positions. One of the Bellows daughters of Radium led this lineup and became junior champion and futurity champion. She is a sweet-faced model of beef form, lower set and thicker than the other Radium calf which won second. The winner is well named Lovelly of Parkedale 16th and her mate is Queen of Beauty 36th. The Prather third-prizewinner is of much the same stamp and so is the Anoka fourth-prize calf. Bellows had another Radium heifer that stood in sixth place.

Junior heifers likewise numbered thirty-four. A very precocious white beef-maker named Rosewood Lady won the class for Owen Kane and the Anoka herd supplied the next one, a thinner but very neat roan. The Uppermill roan Villager's Lassie that won third bore her sire's resemblance but was not fat.

Some sensational displays were made in the group classes. For instances, there were sixteen entries for breeders' young herds, making altogether eighty head of the very best young Shorthorns, mostly roans, in the ring at one time. The keenest of rivalry was felt over the get-of-sire award. This went to Uppermill Farm on the get of Villager. J. W. McDermott's Cumberland Marshal sired the second group.

THE HEREFORDS.

Like the other beef breeds the Herefords made a large and magnificent display of the younger animals and only a few of the older bulls and cows. The aggregation was gathered from as far away as Kentucky and Mississippi as well as Iowa, Missouri and Illinois. Uniformity in size and breed-type prevailed to an unusual degree in each class. It was a show of top animals in the yearlings and calves, and the various exhibitors were matched evenly in the selection and fitting upon which their favorable consideration depended. Trade has been brisk and insistent, so that there was a scarcity of aged and two-year-old animals. All that could be spared have been sold to breeders who are increasing their producing operations. High feed and scarce farm help were also factors in cutting down fitting operations and confining attention to the younger animals which require the least grain and labor.

The pirncipal positions in the prize list were won by the cattle from three or four herds which brought out a wealth of merit corresponding to the very highest ideals of the breed. Blue, red and white ribbons could only be won by animals of the sort which really set whiteface fashion.

The alignment of cattle was entrusted to W. H. Roe, Shelbyville, Ky. In two or three classes he had assistance because animals were entered which he had bred. He picked the popular type unhesitatingly and made a line of graduated merit easy for onlookers to comprehend. There was such an abundance of beef and good breeding that the actual placing of animals depended much upon their quality of flesh.

THE BULLS.

A massive masculine type was picked to lead off the aged bulls—W. L. Yost's Ardmore, popularly acclaimed one of the great show bulls of the breed. He is a very thick, low-set fellow with great rounds, loin and back. He is exceedingly smooth and free from any tendency to roll, although shown very fat. The second bull, Enoch & Worthman's entry, is smaller. There were five in the class.

Eight two-year-olds made a most interesting and closely contested event which uncovered the senior champion, E. H. Taylor's Beau Rosemont by Dictator Fairfax. He is one of the short-legged straight-lined sort, having a very long wide rump. He carries abundant flesh in all parts. The red ribbon was carried off by J. H. Bereman's bull Perfect Donald 2d. He is smaller and he takes no discount on the score of thick mellow flesh on back, loin and ribs, and his character is suitable. The big Yost bull Woodford 1st stood third.

Among the eight senior yearlings an evident winner was found in the Taylor entry Roehampton 19th. He is a long bull, very deep in chest and flank, well finished and well carried either standing or walking. The Yost bull T. Fairfax 3d is also very thick fleshed and an attractive breeding sort. The third bull Beau Blanchard 25th is conspicuous for his short legs and great rounds of beef. Frank W. Van Natta helped judge this class.

Junior yearling bulls numbered ten, and they proved to be the best of the male classes. An appropriate winner was the Taylor entry Woodford 9th, sired by Woodford and out of a cow Belle Donald 108th. It would scarcely be possible to lay covering more smoothly onto a carcass or to draw an outline of more accurate proportions for a bull of the breed. From his well-bred front to his meaty rump and thighs he fills the admirer's eye, whether he be judge, breeder or casual observer. The grand champion ribbon rested naturally on this bull. Another good block of beef with a prepotent appearance is the Yost entry Arranmore, also out of a Belle Donald dam. Both of these were more fully fitted than the third bull shown by Engle, a short-legged, muscular masculine fellow.

A group of sixteen senior bull calves brought out much promising material for sires later on. The Engle herd was successful this time with Beau Blanchard 53d, a calf so nearly perfect in lines at top, bottom and sides that he attracts immediate attention. He is compactly made up of thick cover of the elastic kind. A very burly, aggressive head confronts one who looks at Taylor's Premier 4th in second place. He is a growthy youngster and well proportioned to mature nicely. Two compact bulls came third and fourth in the class.

Half a dozen junior bull calves were shown. The best one was considered to be the Taylor entry Woodford 16th. This calf is a beautiful type of the breed and fitted to a most exacting taste. The next calf, shown by Yost, has considerable stretch but is thin and so seems narrow. A naturally wider and thicker fleshed calf won third for Biehl & Sidwell and might have stood a notch higher but for a weakness of topline.

THE COWS.

An abundance of heft was carried into the ring by the nine aged cows. A pair from the Taylor herd won first and second. The blue ribbon cow Clive Iris 3d is big and very fat, with a great expanse of back and loin finished off as smoothly as one would wish. She is particularly full in the thighs and twist and free from patches. In these respects she is distinctly superior to Matron Donald, the second prize cow. Less condition was displayed by the rest of the cows.

Two heifers of superior quality brought up the front of the line of nine two-year-olds. The larger of the two is the Taylor heifer Woodford Lady 5th by Gray Lad 9th. She is also the thickest and smoothest of them all and her short legs set off her merit to advantage. A smaller but very sweet fine animal from Mississippi wore the red ribbon. Then followed a couple of others not quite so smooth in flesh but possessing desirable breed type.

There were also nine senior yearlings and they included the junior champion Dorothy Hampton 23d shown by Yost. Even at that she had no easy victory over the second and third heifers, both from Mississippi and bearing evidence of skillful feeding as well as good breeding. The winner is large for her age and feels the weight of a load of beef neatly spread over her back. The light red Vernet Princess 38th wearing the red ribbon is a model for her size, and her darker mate lost nothing in estimation by being beaten in such company. W. N. Collier, Fulton, Mo., helped to decide places in this class.

An outstanding pair of heifers appeared among the seventeen younger yearlings. Another of the Woodfords won first place and she leaves little to be desired by the critic of youthful merit. Next to this Taylor entry stood the light red Bereman heifer Columbia March On conspicuous for very thick thighs. She is smaller but more successfully finished over the rump than the Andrews yearling, winning third

Eighteen senior heifer calves gave the judge plenty of work. The first two ribbons fell to Taylor calves, the Princess H securing preference by reason of extreme sweetness of countenance and pleasing proportions. The Princess T heifer, taking second money, was pushed closely by a third Princess—T 6th—similarly well covered over the back and loin and very long in rump.

The classes for single animals were ended with twelve junior heifer calves. TheYost herd scored a victory with a short-legged straight-backed sweet little thing named Bonnie Augusta. She is plump in the thighs and twist, and so is the second heifer, a larger one from the Taylor herd. Greater width and a smoother tailhead made an easy decision between second and third positions. A smaller heifer came fourth in the line-up.

The group classes brought out a great display of Hereford perfection in its precocious development of beef form and the extraordinary smoothness with which such thick backs and rumps can be finished. Eight young herds filled all available space in the ring and the calf herds, get and produce classes emphasized the real breeding work of the exhibitors.

THE ABERDEEN-ANGUS.

The Angus contest was about as keen as it could be made. Three prominent herds sent the best of their animals into the ring, and the classes were swelled by splendid entries from other quarters. Of course the positions of animals depended much upon fitting. One exhibitor answered a query as to why his cattle did not carry more flesh, and he merely answered, "Two-dollar corn." The Congdon & Battles herd from far away Washington state, and the Oklahoma herd of L. R. Kershaw deserve credit for part of the fine showing. The rest of the cattle were from Iowa and Missouri.

Kenneth McGregor, Brandon, Mantioba, tied the ribbons after the first few classes which were judged by W. J. Kennedy, Sioux City, Iowa. Mr. McGregor is experienced with Angus cattle and he worked carefully over the difficult classes. He had the Angus ideals well in mind and measured up to them very closely.

THE BULLS.

Four aged bulls appeared and the real rivalry lay between the first two, which were splendidly fitted and are of unusual natural merit. The Caldwell bull Blackcap Bertram is very close to the ground and his thick cover from shoulder to thigh is worn as smoothly as the outside of an egg. He is as free from angles, too. The Congdon & Battles entry was primed for just such a contest and lost by only a narrow margin. The winner made good championship material.

Half a dozen two-year-olds required some little shifting about. The decision was cast on the side of quality. The Pacific Coast entry is a very nugget of plump, solid beef, bedecked with the front of a prospective sire. The next two are larger and except in less degree than the winner they are stamped all over with the quality demanded in the breed. The second prize-winner is farther from the ground and not so long-ribbed or so wide as the third one but possesses a straighter back.

Escher & Ryan scored a victory among the five senior yearlings when they showed Blackcap Poe, a very good son of Black Peer, and followed him up with another of the same pattern sired by Irwin C. These are meaty bulls from end to end and readily stood ahead of all the others, even though the very last was a good one.

The junior champion was found among the six younger yearlings. This very big son of Oakville Quiet Lad is starting out to live up to family precedents under Battles' showing. His precocious development is remarkable, and with all his superior size he also surpasses the others in the smooth way with which the meat is packed away under his glossy coat. A stretchy thin bull of much probable outcome secured second place for Gardner, beating a pair of smaller Escher & Ryan entries. These two were not highly fitted.

A praiseworthy type was brought to the front of the eight senior calves. The youngster is not so large as some of less age but his quality is outstanding and he carries his back more strongly than the red-ribbon calf. Both are from the Caldwell herd. Third and fourth prizes went to a pair of medium sized Escher & Ryan calves as alike as could be, and very smooth but not fat. A very tidy little fellow shown by Battles had to be content with fifth place.

Five calves constituted the last of the bull classes in which first place was closely contested. It was largely a question of size against extreme quality. The larger calf shown by Caldwell is not so level of rump but is very wide and otherwise acceptable. The little Battles bull, nicely fitted, beat the thin but beautifully stamped Escher & Ryan entry. One could not go far wrong by picking any one of these three.

THE FEMALES.

Scale and quality combined brought a blue and two purple ribbons to Caldwell's three-year-old cow Queen Milly of S. D. 3d. She was the tallest in her class of seven and looked a bit up in the air but her ends, back, loin and sides are laid so smoothly and firmly that she could not be passed by. More flesh would deepen her. The Escher & Ryan cow winning second prize is not so level of back. The Battles cow came third. She is the heaviest and most thickly-fleshed of all, but is hardly so firm as desired.

The same type as in young bulls was chosen for the heifers, excepting of course, that feminine refinement was added. Battles was first and third and Caldwell second in two-year-olds. Their entries were sired by famous bulls and were fitted and shown befittingly. Even more distinction characterized the next class in which the senior yearling heifer Blackbird Gift 13th not only won a blue ribbon for Escher & Ryan but went on to the junior championship. She is the smoothest in the class of five, and also the plumpest in thighs. A very deep-bodied one won second place for Caldwell, and a straight topline secured third place for an Escher & Ryan entry in preference to those following.

There were eight junior yearlings. A sweet dainty feminine youngster won the blue ribbon for Battles, but with little margin to spare over the very good Caldwell heifer. Much the same well bred appearance distinguished the next three heifers, all from the Escher & Ryan herd and none of them fat.

Eleven senior heifer calves included some hard decisions to make and the judge took a long time to make up his mind finally about the same as at first he had indicated. A very sweet breedy deep-chested, short-legged little heifer seemed entitled to the blue ribbon for Escher & Ryan. Rosenfeld had an entry of very similar stamp excepting a bit rough at the tailhead. For this reason she was set down below a considerably larger Caldwell calf. The big calf looked a little out of place between the smooth-backed little heifers, and yet she is not quite equal to beating the better one that stood first in line. Caldwell won the last class of calves with a growthy, meaty daughter of Blackcap Star. A typical Escher & Ryan entry sired by Earl Marshall won second, fitting in ahead of a Caldwell calf that is also of the sweet refined sort.

The younger classes both of bulls and heifers were generously praised by admirers of the tidy doddies. Much show material was brought out which needs only a little more fitting to give it great prestige anywhere.

THE POLLED DURHAMS.

Two herds of Polled Durhams furnished keen rivalry for premier honors. The quality of the cattle was excellent. Hultine, showing the larger herd, won the majority of the bull classes, including the grand championship on his two-year-old bull Roselawn Marshall. In the female classes the tables turned, and Achanbach won the championships as well as the majority of the firsts. Fatima, a promising senior yearling heifer of beautiful type, was the junior champion, while her stablemate, Sultana, an aged cow with plenty of scale, finish and quality, was awarded the senior and grand championships. In the groups Achenbach won on the get of sire and produce of cow, the only classes in which competition prevailed. The judge was F. W. VanNatta, Fowler, Ind.

THE RED POLLS.

The forty-one Red Polls did not approach the number of last year's exhibit, although the quality of the cattle was commendable. As in previous exhibits, the blood of Teddy's Best predominated and was a favorite with the ringside. Nearly all of the first prizewinners were either first or second-generation descendants of that bull. Teddy's Charmer won the aged class with his brother Teddy's Perfection second, and ascended to the senior and grand championship. His son Homer, a junior yearling of quality and scale, won the junior purple, having for competitors other progeny carrying the blood of Teddy's Best. In the female classes competition was keen. Constant, shown by Hill, headed a lot of capital aged cows, and won premier honors among the cows. Bessy Charmer, a senior yearling grand-daughter of Teddy's Best, was awarded the junior purple. As the inevitable result of line-breeding, judiciously practiced, the classes were remarkable for their uniformity. The exhibit creditably represented the breed. Elliott Davis, Lincoln, Neb., made the awards.

THE GALLOWAYS.

The only herd of Galloways on exhibition was sent by H. & G. Croft, Bluff City, Kans.

THE STEERS.

Sixty-four steers were shown in the Iowa boys' calf-feeding contest, and furnished the closest competition of the show. Most of these also entered in the open classes, which greatly augmented the number shown as well as noticeably stiffened the competition. Clifford Tague, Kirkman, Ia., was first in the boys' division on a well-finished grade Shorthorn that was good enough to win the yearling class in the grade Shorthorns. Prof. W. H. Pew made the awards.

THE FAT SHORTHORNS.

Thirty-five steers furnished an excellent group of steers in this class, in which Arthur Barrow won championship on a high-quality yearling. In the grade classes McDermott's two-year-old was awarded the purple over the boys' winner and Bidder's calf. The largest entry was in the yearling class, where twelve steers were shown.

THE FAT HEREFORDS.

E. M. Cassady & Son won all the firsts in the pure-bred classes except the yearlings, in which Taylor took first on Bondsman's Boy, a deep-bodied blocky steer, and Cassady ranked second. In the grades Cassady also took the two-year-old class while Hill's entry in the boys' work copped the yearling class. In the calves Yost's entry was a slightly better-conditioned calf than Cassady's entry, which was second.

THE FAT ANGUS.

In the Angus classes Caldwells and Kershaw divided the honors, with the latter taking the two-year-old class, while Caldwells won the championship on their yearling and took the calf class. Kershaw showed a close second in the yearling, the best class of this breed. Congdon & Battles won the champion in the grades on their calf Doc Yak, an excellent individual.

THE HOLSTEIN-FRIESIANS.

Holsteins led the dairy breeds in numbers, five strong herds from Iowa and Minnesota being represented. Prof. H. H. Kildee of Minnesota made the awards, and from the time the five aged bulls were placed until the showing was completed the ratings reflected his seasoned judgment. Piebe Laura Ollie Homestead King, a son of Oak DeKol Ollie Homestead, grand champion, defeated last year's purple winner, King Segis Johanna Ormsby, because he is more dairy in type, has greater scale and more capacity. The Maywood bull Johanna Ondine Grahambohm Lad, excellent in front, has not the hindquarters to rank above third. Messer Farms won the other bull classes, save the senior calves, where they ranked below Oak Dale Sprink DeKol and the Maywood entry. The winner here was a strong-lined calf of beautiful type and won the purple, leaving the grand championship to the senior claimant. The aged cow class was difficult to adjudicate. Springbrook Darkness lacks type in her head and also in capacity, while Jewel Walker Gerben lacks scale and strength, but she is wonderfully well-veined and has plenty of quality. Drooky Sadie Vale Cornucopia was the best-bodied cow in the class, but deficient in her udder, which is pendulous. Bracelet Clothilde Korndyke won handily, while last year's junior champion Nellie Segis Pontiac won the two-year class from Rose DeKol Wayne Butter Boy, the state champion in butter production, and later the senior and grand championships. Culver showed the junior champion.

THE JERSEYS.

It was a most imposing show of Jerseys. In quality it excelled some former years by a good margin, and the five herds showed a total of seventy-five animals. The breed was fortunate in having no inferior stock shown. Prof. H. H. Kildee, St. Paul, Minn., made the awards. Golden Fern's Silver Thread, embodying dairy form and temperament with the pronounced Island type, ranked above her stablemate, Fairy Lad's Wolff. Toronos Iris, a large cow with lots of strength and capacity, was forced into third place because she had not the type and quality of the first two. Longview Farm also showed the first-prize three and two-year-old heifers, but could take only one first in young females, that on the junior calf. W. S. Dixon & Son showed the other firsts in the female classes, winning junior champion on Oxford Majesty Maid, a junior yearling with wonderful lines and quality and an udder remarkable for its symmetry. She was compelled to cede the coveted purple in the female classes to the aged cow; largely because the old cow shows her worth.

In the bull classes Longview Farm was generally successful. Its aged bull Viola's Majesty's White Sox was placed over Stockwell's Champion because he was cleanercut and straighter-topped. Later he won the highest honors. Mrs. Fabyan won first in the two-year-old class on her lone entry, Combination Premium, Jr. Poet's White Heart headed the six yearlings and later won over his stablemates the junior championship. One of the sensations of the show was the senior calf Jolly Snowstorm, marked like a Holstein save for his head. He won fifth in his class. Competition was spirited and Jersey ribbons won at Des Moines this year were coveted and prized.

THE AYRSHIRES.

The Ayrshire show, though somewhat smaller than in previous years, was of uniform quality. Only three herds were present. The bull classes, except those under two years of age, were hardly up to the standard of the other classes. The most outstanding bull was Seitz's senior yearling calf Cavalier's Lord Rosebery. He is a growthy youngster of exceptional promise. In the aged cow class seven good entries were uncovered. Oldhall Beauty 8th, an imported cow that won the grand championship, is an outstanding individual. The first prize two-year-old Nona Spence is living up to the promise of success she gave in previous years, although the junior championship was wrested from her by her full-sister Good Gift's Nona. The Ayrshire show was altogether highly creditable. Will Forbes, Waterloo, Ia., was the judge.

THE GUERNSEYS.

The Guernsey exhibit was disappointingly light in numbers and not notable in quality. One of the features was the senior bull calf Rookwood Cherub, a youngster of much promise, which Prof. C. F. Curtiss raised from a cow to be sent to be bred to Ladysmith's Cherub. The unfortunate death of Hayes Cherub left Mr. Marsh without an aged show bull, and he did not send a herd. It also left the breed poorer by the removal of that famous show buil and sire. Dairyland Farm had entries throughout the classes with only Rookwood Cherub as a competitor. He was the grand champion bull.

THE BROWN SWISS.

Ira Inman, Beloit, Wis., was the sole exhibitor of Brown Swiss. They were judged by H. G. Van Pelt, Waterloo, Ia.

THE SWINE SHOW.

Twenty-five hundred hogs were in the pens of the big barns. All who passed through seemed to be impressed with the high degree of perfection attained by exhibiting breeders, and the value of the show. Breeders of nine herds were filled with enthusiasm for their favorites. They seemed to have been particularly careful in selecting only the best, and the show throughout was a struggle for supremacy among top-notchers. The number of young breeders showing was gratifying, and most of them were there with the goods. The massiveness and scale of the aged animals halted many a passer-by for a more careful inspection. There was a good deal of barter and exchange among breeders, as well as a friendly exchange of ideas, and few people passed through the hog barns without having learned a lesson. There was a greater uniformity of type than has previously been shown, and the quality was also first-rate. The futurity show was popular; it brought out some remarkable specimens. The judging was done by experienced men.

Poland-China breeders made a show that was highly satisfactory to adherents of the breed and the general public. Numbers were slightly reduced over last year, but the type was more uniform than at previous shows. It was gratifying to note the large number of new exhibitors this year. The fitting was about on a par with that of last year, despite the high cost of feed. The big type of pig was exhibited without exception. In the futurity show Iowa won all ribbons with full classes. Probably the strongest class was the aged boar class, with ten specimens averaging about 1,000 pounds. The ranking was close in this class, and on the whole the balance and carriage of the heavyweights were remarkable. The junior and senior pig classes developed sharp competition among many tip-top individuals. The senior and grand champion boar represents a high ideal in Poland-China type. The junior and grand championship went to a senior sow pig, a beauty to behold. W. L. McNutt, Ord, Neb., made the awards.

Berkshires were not shown in as large numbers as at previous fairs. The quality and type were good, and the fitting was satisfactory. N. H. Gentry, Sedalia, Mo., tied the ribbons.

This breed was represented by a few more animals than were shown last year. No more uniform exhibit has ever been shown in Des Moines. The type represented was the big, smooth type. Only a few aged boars were shown, but all other classes were well filled. The aged sow class was large and the younger sow classes did not lack in numbers. The awards were well distributed. The judging was done by W. A. Hoover, Oskaloosa, Ia.

Hampshire breeders were on the ground with 255 representatives of this breed. The Hampshire sow classes were all good, there being strong competition in the yearling and pig classes. The type shown was good and on the whole the animals were well fitted. The grand championship in the boar class went to an outstanding junior yearling boar. Charles Marker, Auburn, Ill., judged.

The Duroc-Jerseys led in number, there being 882 in the pens. The type was fairly uniform and the tendency to maintain scale was much in evidence. There was no noticeable lack of fleshing. The number of entries in the pig classes far exceeded that of the older animals, and there were fewer older boars and sows than last year. The junior yearling classes in both sexes were filled to overflowing. There was a goodly number of senior pigs, and a fair number of junior pigs. The futurity show brought out a good lot. W. T. Harris, Morganfield, Ky., awarded the prizes.

THE SHEEP SHOW.

Iowa staged one of the best shows of sheep ever held in the state. The exhibit was interesting and instructive for both the exhibitors and visitors. Every pen was filled and some crowding was necessary in order to accommodate the flocks. Before the sheep were comfortably arranged in the pens the buyers were on hand and a great many sales were made. Never in the history of the show has there been such a demand for breeding sheep, from not only men who desired to purchase breeding rams, but men who were looking for seventy-five to 100 ewes. Many flocks will be started from foundation stock purchased. Sales were made in many distant states.

Practically all of the sheep shown by Iowa exhibitors were home-bred and in excellent breeding conditions, none being overdone. Most of the sheep show was made by Iowa exhibitors. The condition of the sheep evidenced considerable improvement over that of former years, indicating that Iowa breeders are gradually learning the proper methods of fitting.

In most of the breeds competition was keen and in many instances there was little difference in the individual merit of the winners.

A very interesting and instructive farm sheep demonstration exhibit was made by the Department of Agriculture in charge of Prof. E. L. Shaw of the bureau of animal industry. The exhibit consisted of charts illustrating the opportunities and reasons for sheep raising and the importance of using good sires. Enlarged illustrations with descriptions of the leading breeds of sheep in this country and models of sheep sheds, hay racks, feed troughs, lamb creeps and hurdles were also shown. Enlarged illustrations were used to show the process of manufacturing wool into cloth, samples of the market grades of wool, a mill sort of an individual fleece and various instruments used for docking, marking and specimens of parasites affecting sheep all attracted considerable attention. A model farm of 160 acres was plotted off for handling a flock of from 60 to 75 head of sheep in connection with general farming, with charts showing the Iowa dog law and methods for flock protection.

It was surprising to see the large number of people who were interested in this exhibit. Many new ideas were secured by the visitors which will be of great benefit to them in flock management. Much praise was heard for the exhibit. Many traveled flockmasters pronounced this the best exhibit of its kind they had ever seen. Representatives of other state fairs were especially anxious to secure this exhibit.

Considerable interest was created by the wool show this year. Some excellent fleeces were on view, indicating that breeders know what a good fleece should be like. The sheep shearing contest was a decided improvement over that of last year. The contestants were judged on time, method of shearing, condition of fleece and condition of sheep. Classes were held for both professional and amateurs in machine and hand shearing. Great crowds showed their interest by remaining during the entire contest.

Robert Miller, Stouffville, Ont., judged the mutton breeds in a very painstaking manner and his awards were well received. Prof. W. L. Blizzard, Stillwater, Okla., passed on the fine-wool breeds in a very satisfactory manner. Prof. E. L. Shaw awarded the prizes in both the wool exhibit and shearing contest in agreeable fashion.

The Shropshires made a remarkable show. In fact Mr. Miller pronounced it the best Shropshire show he had ever seen at a state fair.

The winning animals were of remarkable quality and type, the champions being American-bred. The three leading winners were H. D. Eddingfield, Mt. Pleasant, Ia.; A. T. Jones & Sons, Everly, Ia., and C. W. Chandler, Kellerton, Ia. The competition was very keen throughout the entire show.

A very representative exhibit was made by the Hampshire breed by Walnut Hall Farms, Donerail, Ky., and A. W. Arnold, Galesville, Wis., Walnut Hall taking the lead with an especially well fitted flock.

While the Oxford show contained a number of excellent individuals the exhibit as a whole was not quite up to the usual standard. The leading exhibitors were: John Graham & Son, Eldora, Ia.; Iowa State College, Ames, Ia.; C. C. Cropen, West Liberty, Ia., and Richards & Richards, Lodi, Wis.

The Southdowns made a very creditable showing, much better than in former years. Iowa State College won most of the awards on an especially well fitted flock.

Only one flock of Dorsets were exhibited but this flock was worthy of strong competition. Three exhibitors furnished competition in the Cheviot breed. An excellent lot of Cotswolds and Lincolns were exhibited, most of the prizes going to A. W. Arnold, Galesville, Wis.

As usual there was an excellent lot in the fine-wool division. The following exhibitors furnished the competition: Watson Lovett, Zanesville, O.; Richards & Richards, Lodi, Wis., and A. J. Blakely & Son, Grinnell, Ia. An excellent flock of Rambouillets was exhibited by King Bros., Laramie, Wyo., and it is to be regretted that such a flock did not have competition.

THE DRAFT HORSE SHOW.

Some speculation had been indulged in as to the extent to which the horse department would measure up to the precedents of previous shows. The mare classes of draft horses were judged first, and they were not heavily filled, so some pessimistic comment could be heard. But the stallion classes came out in much strength, especially in Percherons and Belgians. The Belgians never made a better show. Considering the absence of inferior horses, it may be said that the whole draft horse show proved just as interesting and instructive if not quite so extensive as ever. Excellent grade mares and geldings also filled the utility classes Mules added considerably to the numbers of animals for exclusive work use and some very big "nervy" mules were shown. A few well-made big jacks rounded out that part of the show.

Light horses and ponies in numbers and variety were shown before the grandstand daytimes and in harness and under saddle in the Coliseum at night. In addition to some of the veteran campaigners in these classes there were a number of unfamiliar names belonging to first-class young horses. The harness and saddle lots were particularly brilliant and popular, from the larger horses down to the wee Shetlands.

The classes were taken up in rotation by a printed schedule, and the judges kept to the hours with surprising fidelity, even in handling bulky groups. It was a successful plan and eliminated much delay and confusion that usually have occurred.

Excepting for complaint about costly feed and insufficient farm help, the horsemen seemed pleased with the trend of their business. Orders were on hand to buy especially meritorious horses of several ages and of the different breeds. The principal difficulty with that part of it was the extremely exacting requirements as to perfection of type, legs, feet and action, on the part of would-be buyers.

THE PERCHERONS.

It was altogether a very high-class show of Percherons. Of course the distribution of animals was different from old-time precedents, and numbers were smaller than usual. Excepting in the aged classes where a few imported horses appeared it was distinctly a display of American-bred animals. Surprise on all sides was expressed because of the very good and well-grown young stallions brought out. Dealers undoubtedly scouted the breeding sections of America very thoroughly to find so many. As the prizelist indicates, there was a large representation of new and little-known breeders who had the courage to fit and show the likely-looking animals they had raised.

Several large operators who formerly imported most of the Percherons stated that they could readily find in this country as many as their trade requires if farmers would only feed more liberally. Most of their search is necessary merely to find sufficient size. There are plenty of good little ones bred from large enough percentage. This indicates what a good market is missed by those who argue that one cannot afford to throw high-priced grain into colts, especially when they are running on pasture. Prices mentioned were twice as high for the big yearlings and two-year-olds as for the smaller ones of similar make-up. The corn crib cross is thus a 50-50 affair with high-priced foundation breeding animals. The corn can be figured in as high as the market goes and still it will pay out.

Some of the stallions were shown just as big as they have ever been grown even in France. Two-year-olds weighed a ton and more. There was extraordinarily fine quality of bone and correct setting of legs, taking the breed as a whole. In some instances the need of larger bone was plain but that is always true when quality is outstanding. Rarely are the largest of bone and the finest fiber done up in the same package.

High-priced feed, scarcity of capable grooms and the abundance of buyers for the very best horses were all named as reasons why various exhibitors either remained at home altogether or else showd a smaller number than usual. The chronic cry was the impossibility of finding men who know how to fit and handle horses.

The judging was capably done by A. L. Robison, Jr., Pekin, Ill., for the third year in succession. He picked the big serviceable stylish pattern with legs of the very best sort, and stuck right to it consistently. The line-up in class after class was instructive for the breeder. Numbers considered, the work went rapidly.

THE STALLIONS.

Twenty-three aged stallions proved something of a surprise to those who have loudly regretted the cessation of importations. American-breds stood one, two, three. The black Philix has kept in obscurity until six years old and his initial presentation by the Singmasters at the head of this line-up gives promise of great things in future. He won the championship. He is a horse of balanced build, extraordinary bone and tremendously powerful hocks, and he has the style, character, quality and step of a real show horse and prepotent sire. He has to be a good one to beat the light-spotted dark gray Ivan which led the three-year-old class at the last International and was brought back in good condition. Much praise was accorded the well-preserved tight-made black Jour shown as fit as a fiddle by Wm. Crownover. Although eight years old, this vigorous horse has the hardest of legs and a finish of form and a style of bearing which stamp him as a wonderful horse for his size. He looked right in third place, even though it requires a really high-class horse to stand in front of Trumans' thick-muscled big-boned finely-tempered black four-year-old imported Naif.

Three-year-olds numbered only seven. Among them were candidates to try the strength of Singmaster's famous light gray Keota Jalap, a repeated and consistent winner. This colt has not developed as much as some colts during the past year, yet he seemed clearly entitled to continued decoration with the blue ribbon. His sloping shoulder, straight back, level croup and fine quality are as distinctive as ever. The black Dunham's Champion, is larger, more burly of build and withal possessing a pleasing pattern and style both standing and going. He looks like a real show horse with an outcome. Singmaster won third place on a tall blue-gray named Orie, not large of bone but exquisite in quality. His stablemate Eugene is also a big one.

The two-year-old class recalled the days when single exhibitors almost filled the ring with colts weighing right at a ton each. Two dozen answered the call and most of them were big ones. The best-balanced of them all appeared to be Dunhams' black Arago. He is not so tall as some but is powerfully built with a masculine head, strong shoulder and back, long wide croup and superior underpinning. His unusual excellence in important points of make-up brought him ahead of Singmaster's dark gray Jock, the tallest of the lot. Another tall gray colt from the Singmaster stable is Model, of distinct quality stamp but not so large of bone as the two above him. A promising black came fourth.

Yearling stallions constituted a futurity class with fourteen entries and twelve shown. J. T. Judge secured the chief honor on Sir Cyclone, a dark gray colt of compact build, muscular quarters, attractive head and ample bone, but not so springy as might be desired in pasterns and step. A more upstanding growthy colt named Maplegrove Ledgerdemain won the red ribbon for Singmasters. He possesses the back, croup and style one expects to find in a Jalap colt. The third colt Anton D, shown by John Donhowe, is smaller and thinner but is beautifully turned over the back and croup, and he has the very sharpest of cannons and stands better than either of the first two. Don L. Berry had a big-boned good-legged muscular gray that came fourth, beating another good gray shown by J. Hill. There were no culls in the class and some very good ones were left on down the line because they did not quite measure up to the exacting standard of character, quality and joints. In the stallion foal class a couple of creditable youngsters appeared and George Baker's entry won the blue.

THE MARES.

Mare classes were small. This is considered as indicating that the very best mares are busy doing farm work and raising foals and so could not generally be put in shape for their best showring appearance. Much interest centered about the black four-year-old mare Trinquante shown by Dunhams. She is a half-sister to the famous three-year-old Turquoise and plainly shows a relationship. She is a big mare of rare grandeur, strong back, long croup, big bone and hard texture, an easy first-prize-winner; and she won the grand championship. Baker's second prize black Nena is smaller but is also set up on serviceable and seasoned timber.

In the class for mare and foal Iowa State College won distinction with a rugged drafty black named Ellen and her gray foal The Princess. This youngster is sired by Jalap, and displays the expected head, back, croup and legs which that sire stamps on his get.

A couple of three-year-old fillies constituted the whole show in their class, although they could have borne considerable competition. The Hurdcroft entry Pearl had the better of the argument against Babcock's Adelaide. There was a little more spice to the next class in which Dunhams made a successful show with a well-balanced filly named Sylphide. She had to be a real good one to beat her mate Kathleen, a dark gray with round rib, long croup and powerful legs of the best quality. A couple of other likely fillies brought up the rear of this class.

Hurdcroft Farm showed a sweet beautifully-made, deep-chested and nicely-finished black yearling filly named Sara Belle that took the honors in the filly futurity. Dunhams were right after her with La Mascotte, a daughter of Lysee, large, well-proportioned and clean-cut. They also won third on another filly by the same sire and named Lycette. Fourth prize went to Hoit's gray Marguerite, a daughter of Jalap and conspicuous for her strong back, well-proportioned hindquarters and serviceable-looking legs. Like all the others that got a look at the money in this class, the fifth one is another with a splendid quality of underpinning. The Iowa State College Jalap foal The Princess beat the other little fillies. She has the making of a shapely and durable mare. Judge had a youngster of pleasing pattern in second place, and a couple of others of a desirable sort wound up the list.

The special classes extended the Percheron show considerably and the groups proved instructive to students of breeding. The whole display swept away any doubt about American breeders being on the right track. Eight mares were represented in the produce class. The four groups of five stallions each included twenty of the best stallions put together in a long time. Singmaster's lot headed by Lagos easily won first, and the Dunham group came second. Most of these are American-breds. The Truman group winning third was conspicuous for the big bone which characterized the lot.

THE CLYDESDALES.

There was an artistic little display of the Scottish draft horse, adhering strictly to the ancestral precedents as to pattern and performance. The breed has not usually been numerous at this fair but seldom have there been such uniformly typical legs, feather and action. The blood of horses that won honors in the great shows a few years back flows through the veins of most of these entries and accounts for their excellence. The capable veteran Judge Andrew McFarlane Palo, Ia., exercised due discrimination in picking the winners.

THE STALLIONS.

G. W. Merna's grand old show horse Samuda came out in the class of sires and made a wonderful show. He is nine years old and is familiar as one of the most massive and big-boned Clydesdales in this country. He is a genuine draft horse and also displays plenty of quality, so that he looks about as fresh now as he did when a colt. The ten-year-old horse The Pinnacle was not shown in quite so good form by Barron Bros. and he is not so large as the winner, but he has very powerful timber and is a worthy rival in good company. The neat stylish Prince Cedric won third for Ford, beating the smaller compact horse Highland Duke. A big stylish three-year-old Prince Ulysses, a son of Prince Cedric, brought Ford additional honors in the next class. He is of Scottish make-up, and so is his mate Alexander which won second place. A powerful black son of Samuda came third. Three light-colored colts constituted the two-year-old class in which Prince Cedric's fame as a sire was still further extended by the victory of a son named Prince Fickland. A well-balanced entry from the Barron stable came second and beat a tall colt of nice quality shown by Merna.

Only five colts appeared in the yearling futurity class. Prince Cedric again got credit through a bay son called Proud Archer shown by Ford. He is rather strong of head but stands beautifully on the best of legs both as to fashioning and furnishing of feather. He is also quite a muscular youngster. The second colt shown by Barron Bros. is sired by another famous show horse General Davidson. He is named Davidson's Heir and looks the part. He is better turned over the croup than the winner and has more of the desired Clydesdale stamp and style than the third colt, Rollo's Fast Freight. A good light bay came fourth for Barron and a big thin rangy brown of much promise came fifth for Tice. Samuda got the credit for siring the best stallion foal, a tastefully-made youngster shown by Merna. A couple of foals sired by Stately Chief stood second and third.

THE MARES.

The mare classes were likewise small but instructive as to the ideals of Clydesdale breeders. A bay daughter of Samuda named Samuda Violet beat a worthy competitor in the yeld class. She is a splendid mare, of drafty proportions like her sire and good both above and at the ground.

Mr. Merna also won the mare-and-foal class, scoring this time with the roomy and typical five-year-old Molly by Lord Albert and her bay stallion foal by Samuda, which won the foal class. Ford showed a brood mare type in second place and a good thin black mare and her foal came third for Skinner.

Among the three three-year-old fillies Peterson's very drafty bay Eastlawn's Flash 2d, by King Charming, was undeniably the best. With all her quality she possesses an unusual degree of bone, in contrast to her neat black-gray mate which won third. Barron Bros. secured second money on an admirable type named Elmona. In the two-year-old class a pair of daughters of The Pinnacle came in first and second places for Barron Bros., by reason of pleasing pattern all over. The third one Hazel, shown by Merna, is another of the substantial daughters of Samuda, and she possesses abundant quality, although scarcely such extreme silkiness of feather as the chestnut Garnet which won fourth for Skinner.

The best class of the breed from a popular standpoint was the collection of futurity yearling fillies, about a dozen of which were shown in excellent form. The principal honor here went to Tice on Bonita, a wonderfully-backed, beautifully-made bay daughter of Langwater Sultan. It required genuine merit and all-around adherence to the points a Scotchman loves in order to win among so many good ones, and this filly is about as good as they are ever made. Another neat bay named Shy Ann won the red tie for Andrews & Son. Quite an upstanding sort secured third place for Iowa State College. She is named Pearl Queen, is sired by Gray Pearl, and is as beautifully turned over the top as she is superbly furnished below. On down the line the pleasing appearance tapered off gradually from one to another, a creditable showing for the breed and for the judge's appreciation of his task. In the filly foals Prince Cedric annexed more glory through a little miss sired by him. She beat two other good mares.

It is apparent that the Clydesdale show was mainly made up of American-bred animals, even in the older classes, so the substantial drafty type combined with acceptable quality is doubly commendable. The sensation of the Clydesdale show was the filly futurity winner Bonita, owned by Tice. Gray-headed Scotch-bred breeders asserted that no such degree of perfection in head, neck, back, loin, croup, legs, feet, quality and action had ever been produced in this country.

THE SHIRES.

Shires were even less numerous than their companion British breed, the Clydesdales. At that, enough animals were on hand to fill most of the classes and represent the breed's better features. Those horses which were shown are real Shires of the most up-to-date quality in joints, bone and feather. Prof. W. H. Pew, Ames, Ia., did careful work in the capacity of judge. He stuck strictly to the horses with bone that is hard as well as big.

A good breed type was presented in the aged class of stallions, when Trumans' entry the dark bay Kirtling Bold Lion fairly overshadowed the others in size and all-around balanced excellence of conformation, character, bone and silky feather. A rather more compact, level-topped, big-boned bay won second for Summers, and third went to a strong-jointed black shown by Trumans. The R. Connor Co. won fourth on Royal Patch, a smaller horse with very big bone and considerably patched with white. Trumans showed a couple of three-year-olds without opposition. The two-year-old class was the best filled and numbered eleven. Trumans won first as usual, this time on a chestnut of outstanding excellence as a Shire pattern. He has abundant thickness and is massively built; his bone is generous and his quality of the best. Big bone distinguished the whole class but none more so than the burly black that won second prize. A rather compact bay won a third prize for Tom Skola, and Trumans came in fourth with an upstanding gray. The futurity class only drew four yearling stallions. The conspicuous winner was the roan Trumans' Blusterer, a thick colt standing on tremendous bone of hard texture and trotting straight and easily. A bay of excellent quality came second and another bay of less size but very strong back and level croup won third. The last in line is the largest of the lot and possesses the acceptable type of the breed but his legs were not set so truly nor tempered so hard as those above him. Two rugged stallion foals were shown, each having big bone and much muscle.

A very drafty bay mare was shown by J. L. Howard as the sole representative in the yeld mare class. She is a desirable type nevertheless with breadth of beam, a powerful back, long level croup and bone of clean and ample cut. Crawford & Griffin secured the leading positions with mares and foals on two substantial brood mares and their likely-looking youngsters. Even the third-prize mare, the gray Fuchsia, shown by Connor, is a very desirable and drafty type, a hard sort to beat, and she has a good foal. Only two three-year-old fillies reported, a pair of good bays from the Connor stable. The heavier-boned and very typical Dray King Fashion beat the rangier neat-legged Dray Queen Star. More competition added interest to the next class, and Summers won the blue decoration on a bay having wonderful chest and back as well as the desired make-up below. This one named Rampton Clara is more attractive in pattern than her second-prize mate Ciceter Blossom by the same sire Brown Tom 2d. Connor's entry that won third is perhaps chiefly distinguished by the excellent shape and tempering of her bone and joints. The futurity judging was a light affair among the yearling fillies, as only two appeared. These were attractive bays. Six more prizes totaling $94 would have been awarded if enough fillies had been entered. Shire breeders did not take advantage of their opportunity. A single good filly foal was shown by Crawford & Griffin. Group classes were also lightly filled.

THE BELGIANS.

The greatest draft horse show was made by the Belgians. Especially is this true considering the present event in comparison with the small numbers of real show horses which represented the breed in years past. The Belgian has undoubtedly made a good impression in the state, and its breeders are fully awake to the advertising value of the state fair. Classes were large and most of the entries were bred in Iowa. Some of the favorite old show horses have made a remarkable record as sires of show winners at this year's fair. Chiefly through their influence a high standard of quality and correctness has been set for Belgian legs, feet and action. Adherents of all breeds praised the Belgian display. Perhaps the famous feeding ability of the breed had something to do with encouraging owners to bring their animals on to a sufficient finish for showing. Certainly the Belgians were well-fleshed.

Prof. W. J. Kennedy, Sioux City, Ia., assigned positions in the prize-list with rapidity and accuracy. He agreed with current comment that it was the best show in many of the classes that the breed ever made at this fair, and in some cases was the best display ever made by the breed in America.

THE STALLIONS.

Seven aged stallions came out. A darkly spotted chestnut four-year-old named Irvinedale Rowdy put up a dashing display of style and accurate action. He is not fat and so lacked somewhat in massiveness of appearance, but he has plenty of frame, stands on magnificent timber, both as to the cut and the polish of it, and has a well-bred stallion's front. Chas. Irvine owns him and also the third-prize horse, a roan called Canon, which has been heard from before. He is a big horse but seems to have been neglected somewhat in legs and feet. Champlin Bros. showed their well-known big bay Paul de Roosbeke, very hard in the legs and well-fitted. This six-year-old is a hard one to beat anywhere but he is not so bold in manner nor so free in action as the winner. Champlins had in three good stallions, and their brown was fourth and the chestnut fifth. C. G. Wood took the blue tie on his three-year-old chestnut stallion Jupiter, not fat but possessing a nicely-balanced build from top to bottom. He is stronger of back than the big-chested deep-flanked chestnut Indigene which the Lefebure brothers showed in second place. A smaller bay Hamlet Boy won third for Markey Bros.

The two-year-olds, sixteen in number, made a class of stallions whose superior has probably never been produced by the breed in America. Champlins won first on a big thin colt whose bone is extraordinary both for its measurement and density. He has the appearance of growing on to a great size and still preserving the long neck, powerful back and level croup which give present distinction. Chas. Irvine's roan Jupiter's Hero, big and balanced in build and action, gave the winner plenty of competition. Both of these are considerably larger than the third-prize Lefebure entry.

There were sixteen yearling stallions in the futurity class. The Lefebure Brothers are continuing the business of their father the late Henry Lefebure, and it was a source of satisfaction to see them win the first two places in the futurity. Their first colt is a very large chestnut, extra strong in the back, and he has heavy muscle and bone. In these respects he beats the second-prize colt. This one is also chestnut in color and compactly built and has legs that stand more steadily and possess more elasticity in action. Both of these colts are more attracive in character and outlines than the chestnut and the roan with which Good won third and fourth prizes. The stallion foals were good ones. Irvine had the honor of winning the class on a well-made youngster sired by his International champion stallion Alfred de Bree Ecyke. Excellent legs and feet are this colt's conspicuous qualities. McDermott had a thick heavy-boned bay that won second.

THE MARES.

Few mares were brought in. Markey Bros. met no rivals for their pair of blocky chestnut dray mares, both eight years old. The larger of the two won first prize. There was a larger number of mares with foals and the mares in this class were far better individuals. Irvine sent in a fine pair of chestnut mares, each boasting a lusty chestnut foal. Suzette is somewhat superior herself and her foal is straighter and larger, so she led the class. Two other mares slipped in ahead of her mate, and this shows how good the lot was. The Champlins had a big drafty roan named Sadie, very matronly and level of lines, and she had a meritorious bay foal, so these two took second place. Estes had a big bay mare and foal that came third.

At the last International show Wm. Crownover won the grand championship on a chestnut two-year-old filly that was praised unstintingly by all who saw her. Her name is Lista and she has developed admirably. Seldom has so perfect a draft type been produced among the mares of any breed, and she has a sweet femininity that marks her for special approval. She easily won first here as a three-year-old. Her mate Salome, right off the same pattern, won second, and a roan from the same stable came third. These three are all sired by the famous Farceur whose get have added much in the last few years to the fame of Wm. Crownover as a breeder. An outstanding roan, another Farceur filly, secured the blue ribbon among seven two-year-olds. She is made just like the others of that breeding, a typical Belgian of the most up-to-date sort, with substance, bone, big feet, style and the finest of quality. A chestnut, also shown by Crownover, came next by reason of her very strong back and roomy build as well as underpinning of the right kind. The Lefebures had a creditable third-prize winner and Irvine had to be content with fourth in this very good class.

There were ten candidates for futurity honors and Crownover won first, third, fifth and sixth on four roan fillies as tastefully made and finely-mannered as only four Farceur sisters could be. The first one, Paramount Lulu, is the largest and there is not one serious fault in her make-up. It took a really balanced and promising one to slip in among these four, as the two roans did which were shown by Good in second and fourth places. His red ribbon filly Princess B is exceedingly deep-chested, a brood mare kind and a serviceable appearing youngster also. Her mate that won fourth is not so neat and well turned over the tips as the smaller Crownover filly that came just ahead of her. Eight filly foals made an unusually large class for a state fair. One of Irvine's youngsters sired by Alfred won first place. This is the same one that won first with her dam Suzette as mare and foal. Her combination of pleasing lines and acceptable bottoms stamp her as one to be reckoned with in future. The Lefebure red-ribbon filly is well grown and of fine quality.

The most wonderful feature of the Belgian exhibition and of the whole draft horse department was the remarkable excellence and similarity of eight fillies which Crownover showed in two groups as the get of Farceur. They were all typical Belgians of their sire's pattern and every one stood on the kind of legs and feet sought continually by all draft horse users. It was the universal comment that this show proves Farceur to be a great and tremendously prepotent sire.

THE PONY SHOW.

This state fair maintained well its reputation for overflowing classes of Shetland Ponies, with some capital representatives of the Welsh and Hackney Ponies. Shetlands were shown by Mrs. Adam Sterling, Des Moines, Ia.; Bridgeford Farms, Joy, Ill.; George Briedson, Panora, Ia.; C. E. Bunn, Peoria, Ill.; Welty Shetland Pony Farm, Nevada, Ia., and Hugh Hall, Des Moines, Ia. Hackney Ponies and others were shown by Frank Briedson, Bayard, Ia.; A. L. Champlin, Ames, Ia.; Oakland Stable, Oskaloosa, Ia.; Mrs. Adam Sterling, Des Moines, Ia.; C. R. Wells and Bruce Robinson, Washington, Ia., and Welsh Ponies by C. E. Bunn and Mrs. Adam Sterling. Prof. W. J. Rutherford of Saskatchewan did the judging. Mr. Bunn was the leader in ribbon-winning among the Shetlands in the breeding classes and in harness, and Mrs. Sterling's pony won under saddle. The prizes were well divided among the Welsh in the breeding classes, but Mr. Bunn was most prominent with ponies in harness.

IOWA STATE FAIR BREAKS ALL RECORDS.

From Wallaces' Farmer.

The Iowa State Fair for 1917 set a new high-water mark, exceeding in total attendance all past high records by over 50,000 visitors. Total receipts also made a new high total of about $50,000 more than last year, which itself set a new record for the fair. During the entire ten days, the fair was favored with ideal weather—warm enough to be bringing the corn crop along to maturity and cool enough to be pleasant for camping and to spend the days and evenings in the open air. A little shower early in the week settled the dust and added to the comfort of the visitors. The management will be able to clear off all indebtedness and leave a surplus in the treasury for improvements and emergencies next year. The total attendance was just a few short of 350,000 for the ten days.

Iowa has been wonderfully blessed this year with good grain crops, which are bringing profitable prices. With the exception that corn is a couple weeks late, Iowa crops were never better, Iowa farmers are feeling prosperous, and they came to the fair in goodly numbers for a few days of rest and to study the exhibits, with a view to growing better live stock and to using more up-to-date machinery, which will enable them to spread the work of a single man over a larger acreage, and in this way cope in a measure with the serious shortage of farm help that already exists.

Naturally, the war and the new conditions it is creating, was one of the chief topics of conversation among the state fair visitors. The farmer is intensely interested in the operation of the draft law. There is already a serious shortage of farm labor. If farm boys generally are called to the colors, this shortage will be very serious, indeed, before the crops are gathered, and even more serious next spring, when it is time to put in the new crops. Many farmers feel that the boys who have had special training on the farm, and especially those who are actively managing farms, or, as it sometimes happens, are the owners of farms themselves, are more valuable to the nation raising live stock and grain than they would be in the trenches. It is uncertain as yet just what steps the government will take, but the tendency so far has been not to excuse farm boys from military service except in some cases until the crops are gathered this fall. Other industries are also complaining because their workmen are being taken, and it seems likely now that the government will not excuse the farm boys from military service except possibly in very unusual cases.

The presence of some 5,000 soldiers on the fair grounds gave to it a distinctly military atmosphere. Patriotism was pronounced, but not noisy. When the splendid troops of the 168th infantry passed in review before Governor Harding and some 70,000 Iowans on Wednesday, there was plenty of enthusiasm, but of a quiet and determined kind. This indicated to the careful observer that Iowa people realize that we have a serious job on hand—one that will require intelligent cooperation on the part of all, and possibly great sacrifice on the part of many; but it is a job that is necessary, one that we can not honorably avoid, and Iowans are practically unanimous and quietly determined to see it through.

The hotels and restaurants of Des Moines were heavily taxed to accommodate the tremendous crowds of visitors. Many private homes were opened for the accommodation of those who wished rooms in the residence section, and the Commercial Club, through its information bureau, in that way took care of many thousands of visitors. There were accommodations on the fair grounds to feed the multitudes, who came without picnic baskets, and who looked with envious eyes at their more thoughtful neighbors who did provide such baskets, and enjoyed the appetizing contents while seated on the thick grass beneath the trees.

Boys' and girls' club work during the past year has been centralized largely in the production and preservation of food products. An idea of what has been accomplished by club activities could be had by visiting the club building on the hill. There were canned products of all kinds and descriptions. During the summer, members have been sent literature urging them to keep up their work. That many of them responded to these appeals from the government for more food was evident. While the quantity which individuals were able to produce and preserve was small, the aggregate is large, and the total value would be astonishing. There are more than 50,000 members in Iowa alone, and their work includes twelve branches. At the club building, latest improved methods for canning, drying and other methods of saving food products were demonstrated by the extension department of Iowa State College. Wednesday was special club day, every member of a club being admitted free. Prizes were awarded the clubs that made the best exhibits.

The boys' judging contest always is an event of interest. Some of the fair's best cattle, horses, swine and corn were brought before the boys to be judged. Each boy had to pass on two classes of each kind of stock and on two varieties of corn. The time allowed to look over each class and to write reasons for the placing was fifteen minutes for each member. Prizes for those whose judgment corresponded most closely to that of the expert judges were scholarships in the regular agricultural courses at

Ames, valued at $200, $150, $100, and $25, respectively. Competition was limited to boys under twenty-one years of age and to those who had not been classified in college work or those who had never won above fifth place in any previous state fair judging contest. Their work as a whole was highly commendable. The total number of possible points to be gained was 800. The awards follow:

1—George W. Halstead, Ames	684
2—Aubrey Johnson, Cresco	681
3—Raymond McMillan, Mount Pleasant	679
4—Harry Farrington, Silver City	673
5—Carl E. Bates, Newell	672

The model garden plan worked out near the College Building, was a new feature of the fair. Professor C. L. Fitch, of the Iowa Agricultural College, had given supervision to the garden during the summer. It was calculated to be of about the proper size for a farmer's family, and to include the vegetables and small fruits which should be grown in every farm garden. Hundreds of plans of the garden were distributed. Those who failed to see the garden or to get a copy of its plan should write to the college for one before planting next spring's garden. At the rear of the garden, a cave for storage was erected, and a pit for storing vegetables suggested practical ideas. Gardens on most farms are managed in a haphazard way, largely because farmers have given the subject little attention. The idea of the worked-out-model plan was to encourage more system and to show just about how much of each product should be produced to supply the family's needs as well as the arrangement of the various plats in the garden.

A farm sheep demonstration exhibit in the sheep barn attracted a great deal of favorable attention. It was put on by the United States Department of Agriculture, for the purpose of interesting more farmers in keeping sheep. The war has brought about high prices for wool, and there has been money in mutton. The demonstration showed how a 160-acre farm could be arranged to accommodate a flock of about sixty breeding ewes, and it pointed out the acreage of various crops the sheep would need. The exhibit gave in a nutshell the history of the different breeds, and fundamental principles of sheep management. The model sheep barn, sheds and feeding troughs gave sheep breeders practical ideas, which many will adopt. Attention was called to the new Iowa dog law, which should make sheep raising in Iowa more profitable. One of the essentials in sheep breeding which was emphasized was to provide fresh pasture for lambs frequently during the spring and summer. The demonstration rounded out the sheep show in a splendid way.

The school exhibit in the Exposition Building continued to be of interest. It showed how each year more and more attention is being given to industrial education along with the book material. The individual school displays of sewing, fancywork, drawings, art work, etc., made a strong collective exhibit, which drew its share of attention.

Every year an increasing number of folks travel to the fair in automobiles. There were literally thousands of cars on the grounds every day. Quite a number of these came from adjoining states, and every county and neighborhood in Iowa was represented. In years past, special excursion trains were put on by all railroads, which hauled immense crowds, but nowadays a few extra coaches on the regular trains are sufficient to handle the state fair crowds who come by rail. Except for the splendid police work done by the soldiers of the Iowa Ammunition Corps, there would have been serious congestion in the automobile traffic. These men, however, were all experienced automobile drivers, and there were enough of them to thoroly police all main roads and crossings, with the result that there was very little congestion and delay at any time, and no serious accidents on the grounds during the entire ten days. This was a remarkable record in view of the thousands of automobiles on the grounds daily, and the large numbers of pedestrians who were constantly crossing and re-crossing the driveways.

From an educational standpoint, nothing at the Iowa State Fair surpasses the machinery exhibits. As labor becomes scarcer and higher, the corn belt farmer is obliged to spread out his available labor by the use of the latest modern machinery, which enables one man to do the work of several under the old system. The immense Machinery Hall was full to overflowing, and all the available space outside was covered with tents, housing the tractor and threshing machine exhibits and others. In all the odd corners, exhibits were made by a large number of firms, of every type of modern farm machinery. Every implement that the Iowa farmer could use to advantage was on exhibit somewhere at the Iowa State Fair. Gasoline engines were out in the usual numbers. Cement mixing and handling machinery were more conspicuous than ever before, showing the increasing use of cement as a building material, and its growing popularity for this purpose. The average farmer can construct a great many different improvements, and do it with comparative ease by the use of cement. The small mixing machines adapted to farm conditions were especially noticeable, and attracted much attention. In many cases, the Iowa farmer is able to use electrical machinery in his home and for lights around the buildings. A number of firms showed electrical machinery, and there were several farm electrical plants on exhibition, where the power is manufactured right on the farm, and can be used for lighting purposes and also for operating the family washing machine, cooking utensils, and all household and light machinery which can be operated by a small motor.

The tractor exhibits increase in numbers and interest every year. While the show was not as large as the national exhibit at Fremont, yet the Des Moines exhibition compared very favorably with it in completeness and in the number of farm tractors on exhibition. The farm tractor has demonstrated its thoro economic value to the corn belt farmer, and there is a rapidly increasing market in the corn belt for tractors suitable for the quarter and half-section farm. There is also a keen interest in motor trucks for light and heavy hauling, and a large number of these were on exhibition. One entire end of Machinery Hall was well filled with various makes of commercial trucks. There was also a large number of automobile truck attachments on display. By means of these attachments, an ordinary automobile can be converted into a light farm tractor, some of which are claimed to give entire satisfaction, not only for light hauling, but for the light tractor work around the farm. A great number of automobile and tractor accessory firms were represented, exhibiting various attachments and improvements in carburetors, tires, lubricants, standard makes of tires, tire repair outfits, etc., etc.

The section set aside for the silo men was about as full of silos and silo machinery as it could be. Most of the silage cutters were shown in actual operation. The silo has become a part of the standard equipment on every well-organized stock farm in the corn belt. With the average visitor, it is no longer a question whether or not he should put up a silo, but, provided he has the stock to justify it, what type of silo he should select—wooden stave, concrete, cement block, or clay block. The silo men, like the manufacturers of tractors and other lines of modern farm machinery, are largely past the educational stage of their business, and the demand is now constant. The manufacturer who has a product of real merit finds that his business is more of a manufacturing problem than a sales problem. As feed increases in price, the silo, with its possibilities as a conservator of feed for live stock, will become more and more popular.

The automobile show was located in the large space under the amphitheater, and was well filled with exhibits of the latest types of cars. More firms were represented than for several years, and dealers universally reported satisfactory inquiries and sales. It was noticeable that the higher class and higher priced cars are every year becoming more common among Iowa farm owners. Many prosperous farmers, indeed, own two or more cars, keeping a light one for "knocking around" in bad weather, or when going to town for light hauling, and a big car for family driving. Many 1918 models were shown at Des Moines for the first time. It is noticeable that the models of most manufacturers change but little from year to year in essential particulars. There is, of course, minor improvement in body lines and design, and in little refinements that add to the convenience of operation or comfort of the driver. Iowa has the record of owning more automobiles in proportion to population than any other state, and, judging from present prices of farm products, and the growing importance of the automobile to successful farm management, the state will continue to furnish the best market of all for the manufacturers of both large and small types of automobiles.

Farmers took considerable interest in the exhibits of the Iowa State Highway Commission, especially in the improved roads, bridges and culverts. Several types of roads were built at the rear of the tent, to show the various kinds made in Iowa. There was the plain dirt road with its mudhole. Then there were oiled dirt roads, oiled gravel, gravel, asphalt macadam, concrete, brick and asphalt. Illustrations showed permanent bridges and culverts constructed throughout the state during the last few years. The automobile, which is almost as common on the farms as horses, is bringing interest in good roads to a climax, and farmers are beginning to want roads which they can use the year around. The Highway Commission, which has general supervision of all permanent road and bridge work, has eliminated thousands of dollars' worth of excess profits that tax-payers formerly paid to private contractors. Now improvement work is reduced to a system, and fair contract prices are assured.

The College Building, which is always one of the best places on the ground to get real information concerning farming problems, is this year devoted to conservation, and might have been planned by Mr. Hoover himself. The educational appeal is directed more toward the women folks this year than ever before, and domestic science girls hand out recipes on making different kinds of corn bread, oat meal bread, cottage cheese roast, peanut loaf, etc. In view of the present meat shortage, skim-milk and cottage cheese (which is really nothing more than condensed skim milk) are peculiarly valuable as suppliers of cheap yet high-quality protein. The dairy people, therefore, are demonstrating in their booth palatable ways of making soft cheese. They point out that cheese of all sorts is not eaten to a sufficient extent in the United States; that in Iowa they do not make over one-tenth of the cheese consumed. We feel that the college exhibit will have been well worth while this year if it leads to a more extensive appreciation of cheeses, both hard and soft, on the part of Iowa people.

Splendid entertainment was provided for state fair visitors, and of a widely varied character. In addition to the educational features, the management recognizes the fact that the visitors at the fair also seek recreation and relaxation from a strenuous summer's work on the farms and in the factories. In addition to the exhibits and the stock judging, there was an abundance of music by bands and orchestras and drum corps and chorus singers. There were thrilling auto races, and hotly contested horse races, which, tho not so dangerous and thrilling, still maintain the keen interest of the crowd, and, in the opinion of many, "beat the auto races a mile" in furnishing clean and enjoyable sport. There were high-class vaudeville acts all afternoon in front of the amphitheater, and again in the evening. There was auto polo, too, which, for real thrills, has auto racing far outclassed. A big horse show was staged in the stock judging pavilion each evening. At the same time, a splendid display of up-to-date fireworks was given in front of the amphitheater, which was attended by thousands. There were merry-go-rounds of many kinds for the kiddies, and roller coasters for those who felt more daring. A midway of a dozen or more sideshows offered many inducements to catch the dimes of visitors. Refreshment stands and souvenir dealers and the inevitable balloon man confronted one at every turn. The man, woman or child who attended the Iowa State Fair in 1917 and failed to have a good time and clean recreation, had only himself to blame, for there was variety to satisfy all.

Undoubtedly one of the greatest of farm losses is that which results from the deterioration of eggs. The poultry department, therefore, in the center of the building, has an exhibit on the best ways of preserving eggs. Several methods are illustrated, but preference is given to the water-glass method, which is a composition of nine parts of water and one part of sodium silicate commonly called water-glass. Mr. Bittenbender was in charge of the poultry exhibit, and was glad to answer all questions concerning any phase of poultry work.

Every year in Iowa, tuberculosis claims an ever-increasing death-toll among hogs and cattle. The percentage of hogs and cattle affected with tuberculosis, as revealed by slaughter tests, is higher in Iowa than in the United States as a whole. And worst of all, the infection has been growing at a very rapid rate. In 1907, only 1.69 per cent of the hogs of Iowa seemed to be affected, but in 1916 about 15 per cent were affected. Among cattle, the rate of infection increased during the same period from .45 of 1 per cent to 3.89 per cent. All this is brought out very clearly in exhibits in one corner of the College Building, and the exact character of the disease is portrayed by specimens of affected animals.

The engineering people of the college distribute pamphlets on the best way to save coal. The conservation of labor is illustrated by the number of uses to which electricity may be put. The best thing about the college exhibit is that there are people in charge who have the best of really reliable information, and are willing to impart the same to anyone who asks.

The Cow Testing Association exhibit has come to be an established feature at the Iowa State Fair, and each year it attracts more and more attention. It was in charge of the extension division of the Iowa Agricultural College, and college men were on hand daily to give lectures and explain the value of cow test work. This year the exhibit included nine cows from the West Branch Association, one of the more recent organizations, but an average, typical association. The most profitable cow was a fair-sized grade Holstein, which produced 13,463 pounds of milk during the year, returning a profit of $82.12 above a feed cost of $68. The least profitable cow also was an under-sized grade Holstein, which produced only 1,890 pounds of milk. She lacked 57 cents of paying for her feed, valued at $31.95. Two of the cows were grade Shorthorns from the same herd. At a public auction, one would have sold for as much as the other, but the Cow Test Association record showed one had made $48.20 profit, while the other made only $7.07 profit. One pure-bred cow made a profit of $62.80, while another similar grade cow of the same breed made a profit of $63.93, but which the former cow, it was pointed out, her calf was worth at least $50 more money than the grade calf. Each cow was there to illustrate some point in profitable dairy farming, and to emphasize the importance of keeping herd records. At the present time, there are thirty-two active associations in Iowa. J. C. Cort, agent in dairying, of Ames, has charge of them, and he is anxious to send assistance to any community willing to take up the work. At the end of the first year, 28 per cent, or 99 out of 410 cows, enrolled in the West Branch Association, were sold because their records showed them to be unprofitable in the dairy herd. Many of their places have been filled by more profitable animals. This year's exhibit called the attention of hundreds of cow owners to the value of Cow Test Associations, and it should lead to the organization of more.

The Iowa State Dairy Association maintained its usual headquarters booth in the Agricultural Building. Activities of the association include the organizing of boys' and girls' dairy calf clubs, operation of dairy demonstration trains, holding of dairy meetings, cow shows, judging contests, milk record competitions, dairy farm tours, creamery patron picnics, dairy breeders' exchanges, and similar efforts to boost the dairy industry of the state. Attention of dairymen and farmers was called to the annual Dairy Cattle Congress and Show, to be held at Waterloo, October 1st to 7th. Final plans for this great dairy exposition are fast rounding into shape, and those in charge predict as great or a greater show than has ever been held at Waterloo. While many dairy cattle are being sold as beef, the selling, say officials of the Dairy Association, is confined largely to inferior stock which the farmers are better off without. They say high beef prices will weed out much of this stock which is not profitable from a dairyman's standpoint.

The butter exhibit by the State Dairy Department was in honor of Iowa's first butter-maker, Mathew Van Deusen, who died a few months ago. Molded in butter was Iowa's first creamery, run by Mr. Van Deusen. It was located near Manchester, and was started back in 1872. Four years later, Mr. Van Deusen won first prize on butter exhibited at the Philadelphia exposition. The sculptor who molded butter to represent this creamery did a creditable piece of work, and the display was the center of much admiration by all who visited the Agricultural Building. Mr. Barney, pure food and dairy commissioner, called attention, in a display, to greater possibilities in cheese production. One pile of cheese bricks depicted the quantity of cheese sold by Iowa wholesalers, while another pile represented the quantity made in the state. The former pile was several times larger than the latter. Mr. Barney believes it is to the interest of Iowa dairymen to make more cheese.

Unscrupulous dealers still continue the use of scales and measures which do not measure or weigh out the standard quantities. A collection of such scales and measures, which have been condemned and seized by Mr. Barney's department, was on display in the Agricultural Building. Each year the exhibit grows larger, but there is displayed only a fraction of the scales and measures which are seized annually. Mr. Barney says there is less willful violation of this law than formerly, before his department got busy enforcing the statutes. He handed out printed slips, which gave the legal weights of most foods sold as vegetables or fruits, and urged that every consumer insist on getting full weight. It is impossible with the limited force available, however, to inspect every establishment or dealer handling produce, and he asks for the cooperation of the buying public in seeing that the law is lived up to. Whenever any fraud is noticed, it should be reported to the state pure food and dairy department at Des Moines.

Food conservation and utilization lessons were in evidence in many places about the grounds. It was logical that the state pure food and dairy department pay some attention to this matter, which is demanding world-wide attention. The exhibit showed the relative economy of different food products, how much a dime would buy of the various foods commonly used, and the food value of such commodities. Special emphasis was put on milk and cottage cheese as being economical, very nourishing, and good substitutes for meats. Cottage cheese at 20 cents a pound headed the list, while cream cheese, at 35 cents a pound, was second in providing protein or muscle-building material. The food booth urged more system in saving fruits and vegetables for future use, and emphasized the saving in cash outlay that can be made by buying in quantity instead of in small packages.

The showing of fruits, vegetables, small grains, etc., is not quite up to the usual standard in the point of quantity, except in the case of vegetables. The small grain is of superb quality. The apples and fruits, however, on the whole, are somewhat below the usual standard. Perhaps the hard winter was to blame, and also the late spring and dry July.

Few people appreciate the extent and importance of Iowa's state institutions—the work that they are doing and their value to the public. For the second time, a cooperative display of twelve of the state institutions brought thousands of fair guests into closer acquaintance with their good work. In all of these institutions, the old idea of simply confinement and isolation is giving way to a policy intended to mold criminals and useful citizens, to restore to health the mentally unbalanced, and to teach the unfortunate and deficient how to earn a living and become independent of public and private charity. These inmates are taught trades, given an education, and an opportunity. Among the institutions represented were the State Hospital for Inebriates, at Knoxville; the State Sanitarium for Tuberculosis Treatment, at Oakdale; the Girls' Training School, Mitchellville; Men's Reformatory, at Anamosa; the Glenwood Institution for Feeble-Minded; Clarinda State Hospital for the Insane; the Cherokee Hospital; Soldiers' Orphans' Home, at Davenport; State Penitentiary at Fort Madison; Boys' Training School, at Eldora; the Independence and the Mt. Pleasant institutions for the insane and various mental diseases. At the latter place, 1,025 acres yielded $142,382 worth of farm products and $60,000 worth of garden stuff during the last two-year period. Inmates of all the institutions have been taught industrial trades, and a highly creditable display of their accomplishments was worth visiting and studying. If the state institutions exhibit were given up, the Iowa State Fair would be lacking in an important feature.

The splendid Women and Children's Building was headquarters for a large number of exhibits of particular interest to the women folks. This magnificent building, with its wide, cool porches and comfortable seats, is a veritable haven of rest for the tired mother with small children. There is the day nursery, in which babies can be left in care of competent nurses, while the mothers see the fair or rest. There is the playground for the larger children, where they are safe from any possible danger, and where they are in charge of ladies who understand child nature and who know how to keep little folks interested and entertained—all this for a nominal fee.

The Red Cross Association, in charge of the Red Cross workers, explained the work they are doing for our own soldiers and for the deserving soldiers and civilians of foreign countries as well. Visitors from other towns were told how they could help organize Red Cross clubs and help in this worthy work by furnishing supplies or making bandages or knitting sweaters and mufflers for distribution where they are needed.

The public health department had a large exhibit, explaining how one may avoid many infectious and contagious diseases. By lectures, charts and graphic illustrations, they impressed upon the attention of visitors the necessity for more thoro study of preventive measures for both children and adults. There were daily lectures on health subjects, food conservation, canning demonstrations, and numerous other topics of interest to the mother and home-maker.

Lovers of art and flowers found much to enjoy in the exhibits of paintings, drawings and statuary in the art exhibits. The Floral Hall was nicely filled, the showing being especially strong on gladioli. There are a number of florists and suburban farmers near Des Moines who make a specialty of this attractive flower, and who put on large and very beautiful exhibits of the different varieties.

The Exposition Hall was well filled with exhibits of merchants, and also with fancywork competing for prizes, and exhibits of many articles dear to the feminine heart.

The fair wound up Friday with a big crowd which came to witness the automobile races. These races were held on the first Friday of the fair and again on the last Friday, and brought in many out-of-town visitors, as well as a large number from Des Moines. Some of the best dirt-track drivers of the country were on hand. Fast time was the rule, and a large number of interesting races resulted. No serious accidents were reported, but there were several wrecks, and plenty of thrills in every race for the folks who like that sort of thing.

On Thursday afternoon, the prizewinning horses and cattle paraded thru the grounds and in grand review past the amphitheater. It was advertised as a "million-dollar live stock parade," and it was undoubtedly that, and perhaps more, in view of the present prices of pure-bred stock. This parade of the prize-winners has come to be one of the features of the Iowa State Fair every year, and many visitors attend on that day of the parade in order to witness it.

Iowa is not noted as a mining state, but the Geological and Survey Department had figures showing mine products to have a total annual value of approximately $27,000,000. Coal was credited with a valuation of $13,577,608; clay products with $6,749,088; stone and lime with $577,295; gypsum with $12,781,128; mineral water with $18,534; sand and gravel with $720,795; cement with $4,119,952, and other products with $19,300. The exhibit showed the different kinds of products both in the raw state and in the finished form, as well as the process of manufacturing.

The Iowa mines and mining industry department called attention to the extent of the coal mined in the state, and the economy in using it in preference to shipped-in coal. The product is mined in twenty-three counties, and 17,000 men are employed at Iowa mines. A total of $15,000,000 annually is paid in wages, while the total tonnage amounts to nearly 8,000,000 tons. It was pointed out that United States government tests show Iowa coal to be equally as good or superior to much shipped-in coal, and that tests at the Agricultural College, at Ames, show it to be exceptionally high in heat units.

Seven years ago, when M. W. Keating assumed management of the camping ground, he said he could sit at his desk in the headquarters building and count up campers' wagons as far as the eye could reach. Time has changed the perspective. Now it is a line of automobiles from all parts of Iowa, and not only from adjoining states, but from dozens of more distant states. The population of the tented city varied between 5,000 and 6,000 persons, most of whom were registered in the camp directory. This year, part of the regular camping space had to be turned over to the soldier boys, but room was found for all who applied. Those who take advantage of the camping privilege have the best opportunity to get the most out of the fair. They do not have to waste two or three hours daily in getting to and from city homes or hotels, and thus they are on the grounds early each day. The campers had access to a well-supplied grocery store, and every convenience possible was placed at their disposal.

The individual farm exhibits this year were unusually good, there being twenty-three altogether, more than have ever been on exhibition before. The quality is excellent. Practically every farmer now arranges his exhibits in a simple, yet artistic fashion. No longer do they pile up vegetables, fruits and grain sheaves in a huge conglomerate. Judge Heathershaw expressed himself as better pleased with the farm exhibits this year than ever before. In the 80-acre class, City View Farm won first; in the 160-acre class, Autumn Leaf Farm first, and in the Polk County class, Greenwood Farm first.

Ten county agents this year exhibited the products of their counties. Mr. Hoover, the food controller, and Secretary of Agriculture Houston have been keeping the county agents so busy that they have had very little time to make a suitable showing. We believe that the county exhibits are well worth while, because they encourage the feeling of local patriotism and stimulate the farmers to get behind their agents and boost. It is good advertising for counties to be represented at the fair. The exhibits this year were good, but we hope that next year the quality not only will be maintained, but that the number will be increased. Jasper county, with 939 points, won sweepstakes. The other awards follow:

Northern District—First, Dickinson county, 865 points.

North-Central District—First, Buena Vista county, 869 points.

South-Central District—First, Jasper county, 939 points; 2, Polk county, 932; 3, Greene county, 895.

Southern District—First, Des Moines county, 934 points; 2, Cass county, 911; 3, Wayne county, 897; 4, Marion county, 899; 5, Lucas county, 884.

PRODUCTION VIES WITH PATRIOTISM.

From the Iowa Homestead.

With Old Glory flying from a thousand flagstaffs, with troops everywhere, and with such a martial spirit prevailing as was never seen on the grounds before (and not in the state for over fifty years) the 1917 Iowa State Fair, held at Des Moines this week, goes into history as a combination of agricultural prosperity and patriotic ardor the like of which was never known in Iowa, or any other state. Not only were the agricultural and industrial products of Iowa on display at Des Moines; the loyal patriotism of the people, now literally at fever heat, was likewise on display. If the 1917 Iowa State Fair had to be summed up in one sentence it would read something like this: "The greatness of a people manifest in the products of their heads and hands and the loyal patriotism of their hearts." Iowa is producing bumper crops this year. It has virtually completed the harvesting and the threshing of an oat crop the like of which was never seen in Iowa before, 250,000,000 bushels of oats of a splendid quality, bringing 60 and even 65 cents a bushel. It hopefully awaits a corn yield which may pass the 400,000,000-bushel mark and, at 85 to 90 cents a bushel, bring to Iowa farmers well past a third of a billion dollars for their summer's work. In live stock the prospects of profits were never better, nor was there ever such a determination to make Iowa forge still further ahead as the premier stock state of the nation. Farming enthusiasm is at a white heat. Yet farmers are not thinking of their immediate or future profits alone; they are patriotically dedicated to do whatever the nation may have need of them to do. It was with this spirit that they came to Des Moines, in this spirit that they mingled with the thousands of soldiers, saluted Old Glory aloft on the thousands of flagstaffs and talked the foreign situation over, sometimes with bated breath, to be sure, but always with the feeling that the country and the flag which have never been whipped were still the grandest on earth and that no sacrifice was too great to keep them preeminently in the vanguard of liberty, democracy and civilization. Production and patriotism were the keynotes of the 1917 Iowa State Fair.

Something like 10,000 soldiers are encamped in Des Moines this week. Two thousand of these are colored troops, training to be officers. Over 4,000 are former National Guard troops, now in the federal service, ordered to leave shortly for Mineola, Long Island, to be a part of the next detachment sent to France. Several hundred are guarding the immense cantonment which is being built near Des Moines, where 35,000 to 40,000 boys and men from Iowa and nearby states will be trained in soldiering. Several other hundred are members of various companies, ranging from the signal corps to the ammunition train. Des Moines is practically an armed camp. These soldiers were given the run of the fair grounds; several thousand of them were encamped there, awaiting orders to leave for the front. Altogether they made an attraction greater than any the fair has ever known. Friends and relatives flocked to the grounds to see them. Patriotic Iowa looked them over, some for perhaps the last time. There were soldiers everywhere. Every day a different detachment drilled before applauding thousands. They went through the most intricate maneuvers with hardly a flaw. Bugle calls were constantly being heard, the tread of armed men sounded above other noises; flags were everywhere, the fair had such a martial air as made every heart beat faster. Khaki, khaki everywhere and Iowa paying homage to a soldiery upon which history relies for the world to be kept safe for democracy.

With the exception of Monday forenoon the weather was ideal. Heavy clouds obscured the sun on Monday morning and ominous rumblings of thunder forecasted a bad day. By noon, however, the skies had cleared and save for the fact that it was unseasonably cold the day was a good one. Tuesday and Wednesday—always the big days of the fair—were ideal for fair visitors, a little too cold to make good corn, but just right for the arduous task of seeing everything the fair had to offer. The result was that on Tuesday the attendance reached 65,917, which was 6,000 above the corresponding day last year and within 500 of the largest attendance the fair ever knew, Tuesday of the 1913 exposition. When the gates closed Tuesday night the total attendance was 220,877, which was 15,000 above last year's figures. Wednesday dawned ideally clear and pleasant, so that by Friday night the attendance should pass the third of a million mark, without doubt. This year's fair will make money, as it amply deserves. Not only were the crowds larger, but they were more liberal than ever with their money, so that almost each day's receipts showed a gain over last year. Admission prices were not raised and there were no incidents of overcharge, either on the grounds or down town, officially reported.

Live stock prospects were never better in Iowa. Prices are at the top notch. Farmers who never went in for feeding operations before are seriously considering their possibilities and profits. The United States Department of Agriculture has launched a campaign to restock American farms with cattle, sheep and hogs. Every farmer who has roughage or feed going to waste or who can feed stock will be asked to cooperate. The government proposes to do its part by arranging for a distribution of feeders and help in extending credit to farmers. It has been pointed out that every farmer who can feed stock should do so; first, as a patriotic duty to help relieve the meat situation; second, because of the fact that it offers him a better chance of a fair return than in years past. It is not to be wondered at, therefore, that the stock exhibits attracted more than usual attention at Des Moines this week. The entries in all departments were large and of a high quality of excellence. In some departments the entries were not as heavy as in former years, but the Iowa fair will continue to maintain its supremacy as the paramount live stock exposition of all the grain-belt fairs this year, as heretofore. Farmers leaned across the pens and discussed the new conditions which have grown out of the war. They arranged to enlarge their stock operations. The fair this week was a clearing house for farm needs and problems, an incentive to do still better work in the future. Present conditions and lessons learned at this year's fair cannot help but give an impetus to the stock business in Iowa such as nothing else has done in many years past.

An unusual exhibit, and one which attracted much interest and attention, when the public finally found where it was located, was that showing the manner of conducting trench warfare nowadays. The exhibit consisted of a barbed-wire entanglement, such as the soldiers are forced to fight their way through in Europe, and a series of first, second and third line trenches, with communicating trenches and first-aid shelter pit, showing the manner in which troops are zigzagged from the rear to the firing line and are returned and cared for when they are wounded. The trenches were so deep that visitors could pass back and forth far out of sight, except from aeroplanes and balloons above, and were built on exactly the same plan on which the real trenches in northern France are built and maintained. Warfare has ceased to be an open affair, charging one another, or picking out an enemy and firing at him. Today it is a matter of digging in and awaiting the artillery bombardments and barrages. No matter how many splendid articles one may have read describing trench warfare, it is doubtful if as accurate an idea of trench conditions was to be had as from the trenches shown at the fair this week. The soldiers who dug these trenches and who explained their operation deserve a great deal of credit. We may abhor war, we may believe that this war was thrust upon us, we may pray for peace, but the fact remains that the war is on and that we should understand conditions the very best we can. This exhibit helped us to do this.

A striking exhibit showing the number of varied uses to which electricity can be put on the farm, and the low cost thereof, was made at the state college building. A number of appliances, ranging from a churn to a curling iron, were operated by the electric current, while above each was a placard showing the cost. According to this display, 4 or 5 cents' worth of electricity will do any one of the following chores around the farm: Separate 1,400 pounds of milk, churn twenty pounds of butter, do two large washings, clean all the rugs in the house, sharpen an ax or a scythe six times, pump enough water to last a family two days, run the sewing machine six hours, light a thirty-two-candle-power lamp an hour a day for five days, heat an electric iron half an hour, make five slices of toast every morning for four days, make coffee for a family of six, run a twelve-inch fan four hours, heat a heating pad from four to eight hours, heat an electric curling iron once a day for a month. Electricity is coming, more and more, to be the handy choreman around the farm and the college proved to the thousands who studied the exhibit that it is a cheap as well as an efficient worker. With generating machines now within the cost of the average farmer and storage batteries perfected to a high degree, electricity is coming to be more and more popular on the farm. No exhibit at the college building was more striking or conclusive than this one.

The tented exhibit of the Cooperative Cow-Testing Association attracted the usual attention and proved in conclusive manner that it pays to cull out the unprofitable "boarders" and systematically to determine which cows are producing the most milk and butter fat. Nine cows were exhibited by members of the West Branch Cow-Testing Association, their records for the year ending June 30, 1917, being as follows: Josie, a grade Holstein, 13,463.2 pounds of milk; 368.7 pounds of butter fat; value of product, $140.15; cost of feed, $68.03; net profit, $82.12. Imp. Daisy II of La Marie, 6,166.6 pounds of milk; 374.2 pounds of butter fat; value of product, $141.66; cost of feed, $51.09; net profit, $90.57. Kicker, a grade Short-horn, 7,436 pounds of milk; 313.5 pounds of butter fat; value of product, $119.54; cost of feed, $46.44; net profit, $73.10. Clumsy, a grade Short-horn, 5,634 pounds of milk; 265.8 pounds of butter fat; value of product, $92.19; cost of feed, $43.99; net profit, $48.20. Goshen Cardone, a pure-bred Holstein, 7,811.2 pounds of milk; 322.7 pounds of butter fat; value of product, $123.57; cost of feed, $60.77; net profit, $62.80. Laurie, a grade Short-horn, 2,956 pounds of milk; 110 pounds of butter fat; value of product, $41.62; cost of feed, $34.55; net profit, $7.07. Poney, a grade Holstein, 1,890 pounds of milk; 87.1 pounds of butter fat; value of product, $30.95; cost of feed, $31.52; net loss for the year, 57 cents. With these animals was shown Lily, a grade Guernsey, which in seven months produced 3,762.2 pounds of milk; 189.4 pounds of butter fat, value of product, $80.15; cost of feed, $34.17; net profit, $43.98. When one cow produces a profit of $43.98 in seven months and the other a loss of 57 cents in twelve months, while their feed cost is practically the same, the value of weighing the product and eliminating the unprofitable cows is most conclusively shown. There are now thirty-one cow testing associations in Iowa and the movement is gaining favor every day. This year's exhibit was most conclusive and will go a long ways toward further popularizing the campaign. Practical advice on how to organize an association is given herewith: "Get in touch with your county agent and your buttermaker, then make a list of all the farmers in your community who are milking seven or more cows and who might be interested in such an organization. Send this list to the agricultural extension department, Ames, Iowa, with the address of each man, and bulletins dealing with the cow-testing association and dairying will be sent to each address. Talk the proposition over with your neighbor. Call a meeting, advertise it well and invite every man who milks to come. Write the agricultural extension department, Ames, Iowa, and they will send you a speaker to explain the purpose, plans and benefits to be derived from such an association. After this meeting get all those interested to sign the membership agreement. If the twenty-six are not secured at the meeting it will be necessary to complete the list by making personal calls. When enough members are secured another meeting is called, to elect the officers and adopt the constitution and by-laws. As soon as a competent supervisor is secured the association starts work."

Splendid advice on the care and preservation of market eggs was given by means of object lessons and placards at the State College Building. A table was displayed showing the approximate loss in marketing eggs, a loss which might easily be reduced to the vanishing point if sufficient care were taken. According to this table, the average loss in marketing is as follows: Dirties, 2 per cent; breakage, 2 per cent; chick development, 5 per cent; heat and shrunken, 5 per cent; rotten eggs, 2.5 per cent; moldy and badly flavored eggs, ½ per cent; total loss, 17 per cent. Experts were present to show how each of these losses might be dispensed with, the following being the main hints for producing better eggs: Do not keep mongrel stock; keep the nests clean; do not market small or inferior eggs; separate the males from the females as soon as the breeding season is over; keep all eggs in a dry, cool, well-ventilated place; never wash the eggs. The poultry products being one of the chief sources of revenue for the farm woman, this display was inspected with interest by thousands, while the advice was listened to avidly and the literature which was offered taken eagerly. The college authorities are hopeful that such striking object lessons will minimize the poultry loss on the farm and add materially to a side source of income, the possibilities of which can hardly be overestimated.

Visitors to the country from the city marvel at the number of fine, new farmhouses which are being built literally by the thousands, these days. In most cases these fine, new, modern structures are placed immediately in front of the old, outgrown and dilapidated building, showing the improvement stages in farm life. That all this farm home building is warranted and that it is costing the farmer little more to build a modern, up-to-date house, with every desired convenience, than it did to erect a much poorer, smaller structure in the old days, was proved by the exhibit of one of the principal firms which sells ready-made houses and general building materials direct to the farmer. This concern exhibited a very neat and home-like house, with a large placard announcing that in 1914 it took 2,103 bushels of corn to pay for the place, while this year it takes only 904 bushels. The fact is, the farmer was never in a better condition to enjoy the conveniences and luxuries of life, hence the great increase in farm-home building within the last few years.

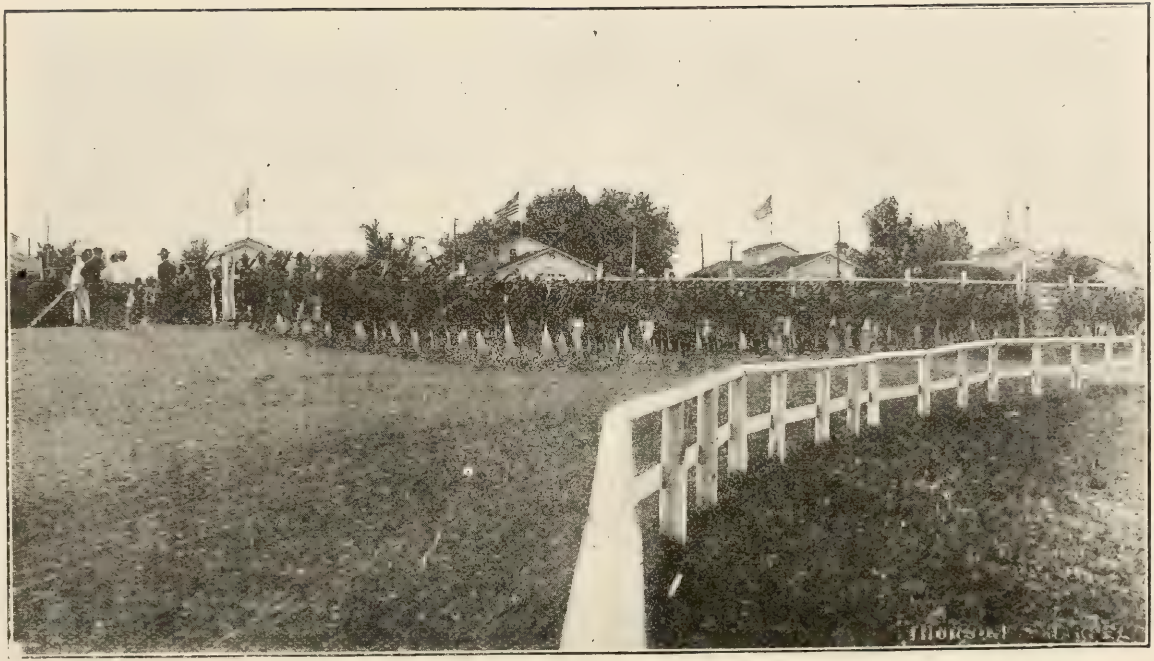
The cheese-making energies of the state college of agriculture were well set forth in a display at the state college building. The value of cheese as a food, as well as its financial profits to the maker, are coming to be well realized. At this exhibit literature was given away showing the food value of soft cheese, and the manner in which it is made, in its various forms. The food value of cottage cheese was shown by placards. For supplying protein, one pound of cottage cheese equals 1.27 pounds sirloin steak, 1.09 pounds round steak, 1.37 pounds chuck rib beef, 1.52 pounds fowl, 1.46 pounds fresh ham, 1.44 pounds smoked ham, 1.58 pounds loin pork chop, 1.31 pounds hind leg of lamb, 1.37 pounds breast of veal. On the basis of energy supplied, one pound of cottage cheese equals 8 1-3 ounces sirloin steak, 11¼ ounces round steak, 11¼ ounces chuck rib beef, 10¾ ounces fowl, 5½ ounces of fresh ham, 5 ounces smoked ham, 6 ounces loin pork chop, 7 1-3 ounces hind leg of lamb, 12¾ ounces breast of veal. It is seldom that the state college exhibit has been more varied, more instructive, more valuable or more interesting to the general farm visitor.

The farmers of Iowa now have more than $125,000,000 invested in farm machinery. They are the best customers the manufacturer and jobber have. They are the quickest to discern the need of labor-saving devices and the quickest to buy these, once their worth has been practically demonstrated to them. It is not to be wondered at, therefore, that the machinery exhibit of the Iowa State Fair should stand second to none and that it should attract thousands of farmers every day, who spend hours inspecting the various devices and appliances, watching their practical working and arranging for their installation on their own farms. The machinery exhibit is by all odds the busiest place on the fair grounds. It is a scene of industry which is eloquent testimony to the efficiency and progressiveness of manufacturer, jobber and farmer alike. Entire families wander from one exhibit to the other, comparing fine points and good qualities, asking eager and intelligent questions and taking literature literally by the pound. Never were labor and time-saving mechanical aids in such demand as on Iowa farms today. Never was the machinery exhibit larger, better or more interesting than at Des Moines this week.

Iowa is the foremost state in the Union in the matter of automobiles proportionate to population, having one motor car for every eleven persons, a record better than that of any other state. It was fitting, therefore, that the automobile show at the fair this year should have been larger and better than ever. Not only were more cars shown and more space occupied, but the exhibits were striking proof that Iowa farmers are buying a better grade of cars and are in the market for the very best accessories. Something like 100 makes and styles were shown and the automobile exhibit was always thronged with interested onlookers. Car prices are expected to rise in the fall, so that the market is now quite keen, and many of the big concerns have difficulty keeping up with the demand. Iowa has over 250,000 automobiles registered so far and it is a safe guess that the show at Des Moines this week will increase sales very materially, especially among farmers.

Clifford Tague, of Kirkham, with a yearling Short-horn baby beef, was the winner of the baby beef contest among boys of the Iowa baby beef clubs. Donald Heil, of Corning, with a Hereford, finished second. George Rosenfield, of Kelley, with an Angus, finished third. A total of fifty-six beeves were entered by as many boys from all parts of the state. Other winners in the order of their awards, were as follows: Homer Town, of Oskaloosa; Howard Anderson, of Ross; Raymond McMillen, of Mount Pleasant; Richard Siberling, of Mitchellville; Harold Labought, of Nevada; Charles Strothman, of Yarmouth; Theodore Fricke, of State Center; Earl Bickland, of Mapleton; Elmer McMillen, of Mount Pleasant; Neal Bixter, of Corning; Ray Longfellow, of Elkton; Tom Evans, of Roscoe; Otis Rash, of New Providence; John Field, of Paton; George Housman, of Gilbert. The contest was spirited and the quality of the entries was uniformly good, testifying to the interest taken by the boys and their general efficiency.

The usual statue or figure, molded of butter, which has adorned the dairy exhibit for many years, was supplanted this year by a reproduction, in butter, of Iowa's first creamery, located near Manchester, in 1872, by Matthew Van Deusen, who passed away during the last year. The exhibit was in the nature of a memorial to Mr. Van Deusen and was well deserved. That splendid pioneer in the dairy industry in Iowa took first prize on butter at the Centennial Exposition in Philadelphia in 1876 and was active in the dairy work until his death. It is well to give such credit to such men and to keep historical facts alive in the minds of the young, as this reproduction of Iowa's first creamery can hardly fail to do.



Troops leaving the race track after the Grand Review at the 1917 Iowa State Fair.

PART V

State Dairy Commissioner's Report for Year 1917

W. B. BARNEY, Commissioner

Never since the organization of this department in 1886 has it been confronted with problems more difficult of solution than it was this year.

With grain and all kinds of agricultural products selling at unheard of prices, it is difficult to convince the farmer-dairyman that he should be patriotic enough to keep his cows, feed them ensilage made from corn that would sell for $1.20 per bushel, oats worth 60 cents per bushel, bran costing $37.00 per ton, oil cake $56.00, gluten feed $56.00, cotton seed meals $55.00, and all other feeds in proportion and then sell his dairy products for less money, perhaps, than he would have received had he marketed his products in their raw state.

It is perfectly natural that the dairyman should feel that he should have fair compensation for his labor, but it is a physical impossibility for him to do so if he does not get an increase in the price for his milk, butter, cheese and other dairy products somewhere in proportion to the extra cost of feed he has used.

The following from Wallaces' Farmer, October 5, 1917, has bearing on this point.

''Butter averaged 43 cents for September, 1917, which is by far the highest September price on record. But with corn at $2.10, the corn price of butter was 83 cents, leaving a loss of 40 cents a pound. This is unquestionably an exaggeration. Corn, which is ordinarily our best live stock food by which to measure production costs, has temporarily lost all sense of balance. Just as a matter of interest, we have used something altogether different from corn as a measure of butter values, namely Dun's Index Number. On the basis of the standard ratio between Dun's Index Number and butter during the past ten Septembers, we find that butter sold during September, 1917, for 9 cents per pound less than the composite price of wheat, corn, oats, hogs, cattle, sugar, steel, copper, cotton, lumber, paint, etc., etc., would warrant.

"From whatever basis you approach the business of feeding cows for butter production, you find a record of a period of four years (late 1913 to late 1917) of unusually discouraging conditions. It is to be hoped that before the winter of 1917-1918 is over, the dairy business will be so thoroughly liquidated that there will again be fair profit in butter production. Can it be that in times like these the world is unable to pay a fair price for any higher class fat than lard, cottonseed oil and oleomargarine?

"When feed costs decline, however, as they certainly will, to some extent at least, dairying should find itself on a very profitable basis."

Farmers are not and may never be organized to protect themselves as well as are the labor interests. The most they know about the eight hour law or eight hour day, is how they can get two of these days into twenty-four hours. The public has become so much in the habit of buying milk at less than its real food value is worth, that they resent any increase in price, though to the individual of ordinary common sense it should be apparent that milk with all other food products must bring an increased price in proportion to the increased cost of production.

When you pay 14 cents per quart for milk, you would be required to pay for the same amount of food value in beef steak 23 cents, in eggs 26 cents and in oysters $1.20. There appears to be little complaint or talk of trusts or combinations when the big interests put round steak at 35 cents per pound, yet you should pay 26 cents per quart for milk to get the same amount of food value.

On page 283 of this report I present a chart showing the part of a dollar required to purchase as much food value as is contained in one quart of milk. It is easy to understand that the dairyman is not going to feed high priced feed products to cows and sell his products out of proportion to other food products.

As commissioner of this great commonwealth, I am interested and have been using every effort to get the farmers to keep their cows and retain their heifer calves so that this country may be able to supply the necessary amount of fats for the army that this war may be brought to a successful conclusion.

Good authorities tell us that six and eight-tenths pounds of corn fed to a good beef steer will produce one pound of live weight worth 12 cents.

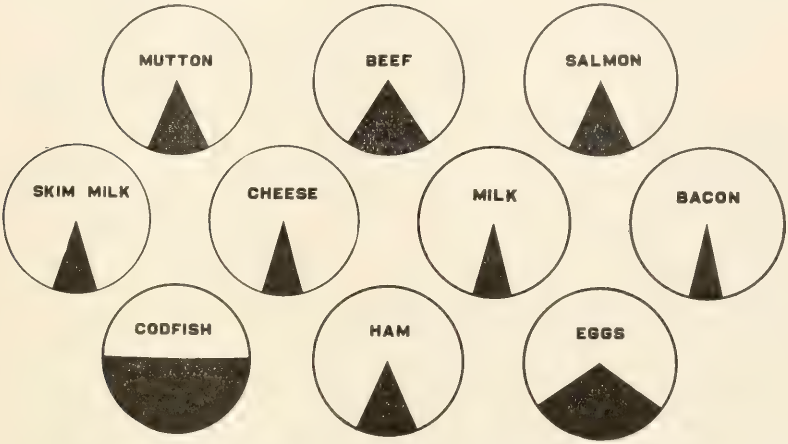


Chart showing the part of a dollar required to purchase the same amount of food value as is contained in one quart of milk.

This same feed or its equivalent in cost will produce a pound of butterfat worth 46 cents when fed to a good dairy cow.

You must sell the steer before you get the 12 cents and you have nothing left. After receiving 46 cents for the butterfat you have the cow left to go on and produce her like and continue to act as a source of income.

The difference between the price that the steer returns for the feed and what is received for the butterfat is 34 cents. We think this fair compensation for your labor.

There is no question that the dairy industry is the leading animal and food producing industry of our country. It makes no difference from what angle you look at the matter, the conclusion is always the same. The dairy cow is the greatest producer of human food we know of. One of our agricultural experiment stations has made the comparison between the food produced by a good dairy cow in one year and the carcass of a fat steer weighing 1,250 pounds.

The total amount of dry matter in the milk was 2,218 pounds, all of which is edible and digestible. The steer, with a live weight of 1,250 pounds, contained 56 per cent of water in the carcass, leaving a total of 548 pounds of dry matter. In this dry matter of the steer is included hair and hide, bones and tendons, organs of digestion and respiration; in fact, the entire animal, a considerable portion of which is not edible. The analysis of the steer's carcass was made from samples taken after grinding together one-half of the complete carcass.

The figures are as follows:

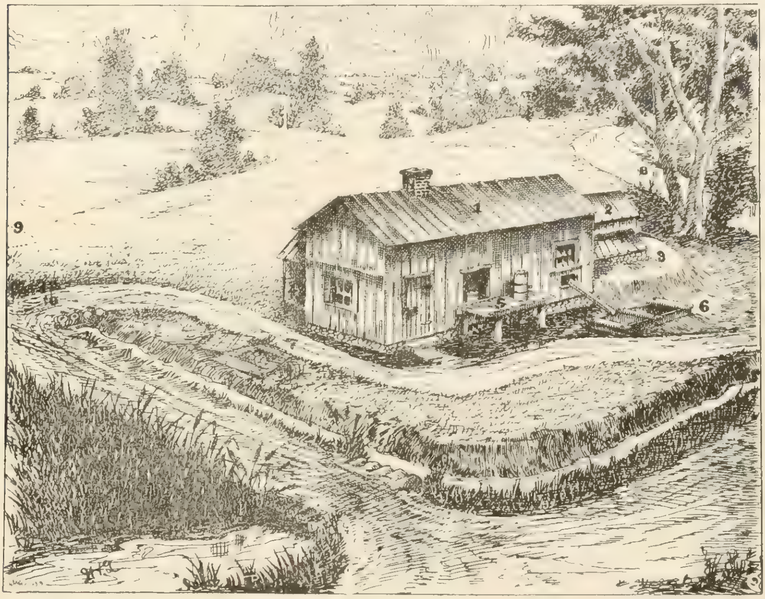
	18,405 pounds milk	Steer, weight 1,250 pounds
Proteids	552	172
Fat	618	333
Sugar	920	...
Ash	128	43
Total	2,218	548

The cow produced proteids sufficient for more than three steers; nearly enough fat for two, ash enough to build the skeleton for three, and in addition produced 920 pounds of milk sugar, worth as much per pound for food as ordinary sugar.

To win the present war our Food Administrator has asked every one to assist in the conservation of all foods but more especially of those most needed by our allies. He strongly urges the housewives of this country to "buy with thought, cook with care, use less meat and wheat, buy locally produced foods, serve just enough, use what is left and waste nothing." The dairy cows of this state afford the housewives of Iowa the means of complying with the Administrator's request without much inconvenience. At the same time they afford the housewife an opportunity to feed the family more cheaply and with foods better adapted to the needs of the body.

Milk can be purchased in quantities sufficient to replace some of the more expensive and less valuable foods. Milk may be consumed as a beverage or used in the cooking of vegetables, special dishes and desserts, for no matter how it is prepared, it has lost none of its food value and ease of digestion. Milk and the various kinds of cheese are the most perfect and valuable substitutes for meat and cost about one-half as much money as the cheaper cuts of meat. Milk is a locally produced food and is one of the few finished food products obtainable in any locality. In its raw state it is a perfect food for man. There is no waste to milk; the last drop is just as nutritious as the first. There is no husk, bone, skin or shell to discard; each particle is digestible. Even the last portion of a previous day's supply is valuable in cooking or baking even if it may be sour.

I wish again to lay emphasis on the value of milk as a food. As will be seen from the following cuts milk, common with all other foods of animal source, is relatively rich in protein. This food constituent, present in milk chiefly in the form of casein, is indispensable for the formation of body tissues and fluids. Although the other food constituents (fat, carbohydrates and ash) are also present in good proportions, it is chiefly as a protein food that milk and milk products find their logical place in the diet; an easily digestible and economical substitute for meat and fish. If the food constituents of milk are compared with those of other animal foods, it will be observed that milk contains more carbohydrates and is free from waste.



Spring Branch, Iowa's first creamery located near Manchester, Iowa, in 1872 and in which Matthew Van Deusen made the butter which took first prize at the Centennial Exposition in 1876.

Reports coming to the dairy and food department indicate that there will be a marked falling off in the make of creamery butter this year as compared with last. (Note—The data on the production of butter, given elsewhere in this report, is for the year ending July 1, 1917, and not for the calendar year.) This may be partly accounted for as the farmer dairyman is disposing of part of his cows, not being willing to feed them on high priced grain.

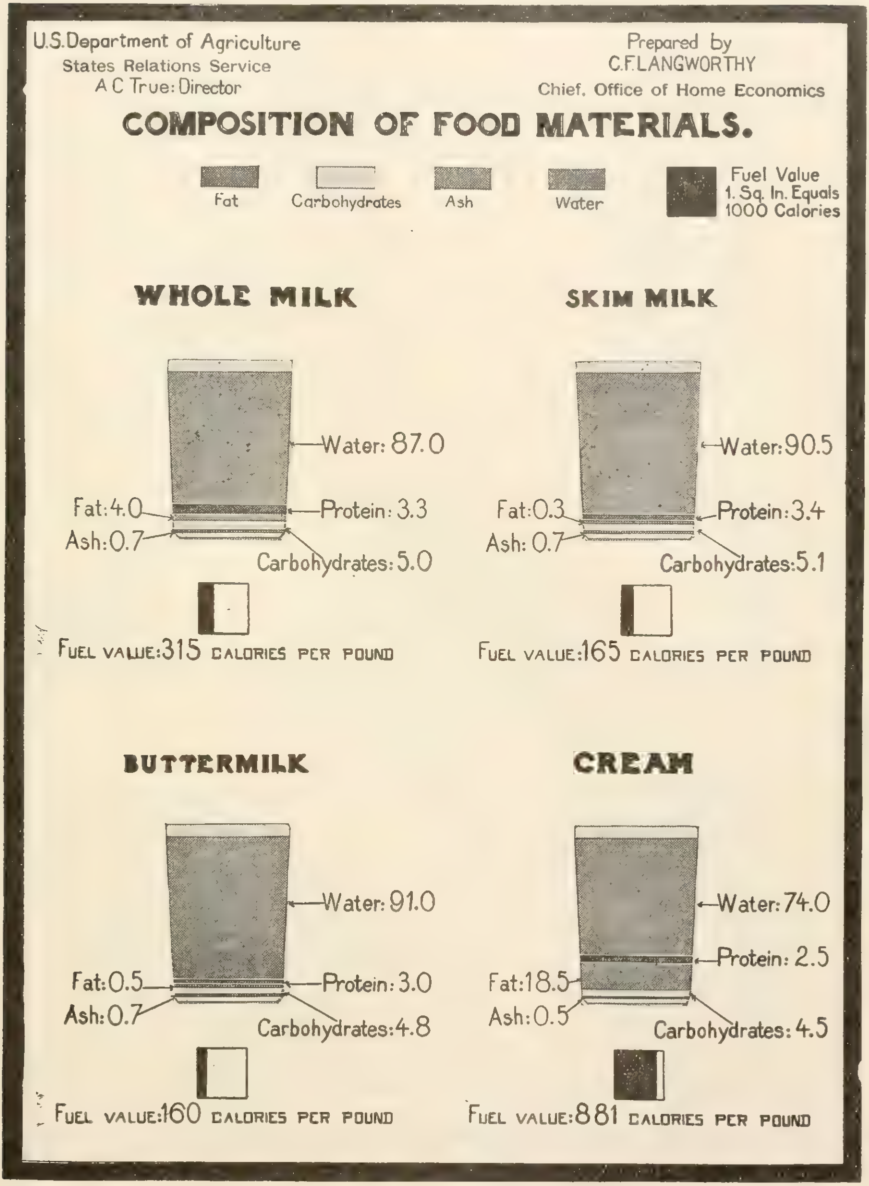
If the herd is to be decreased in number, the elimination should come after the use of the Babcock test and scales so as to be rid of the unprofitable boarders. It should be remembered that it takes several years to replenish our dairy stock. It is my prediction that all kinds of dairy cows will very soon bring better prices. I do not feel that my appeal to save the she-stuff need necessarily be from the standpoint alone of its being a patriotic duty, but for the reason that dairymen will find it profitable. I have used my best efforts to induce the dairymen of the central west to save all the heifer calves that they have reason to believe will make profitable dairy cows when grown.

Many of the old countries are suffering now on account of their short-sightedness early in the war. Let us profit by their mistake and do all we can to keep our herds intact, thereby rendering a service to humanity.

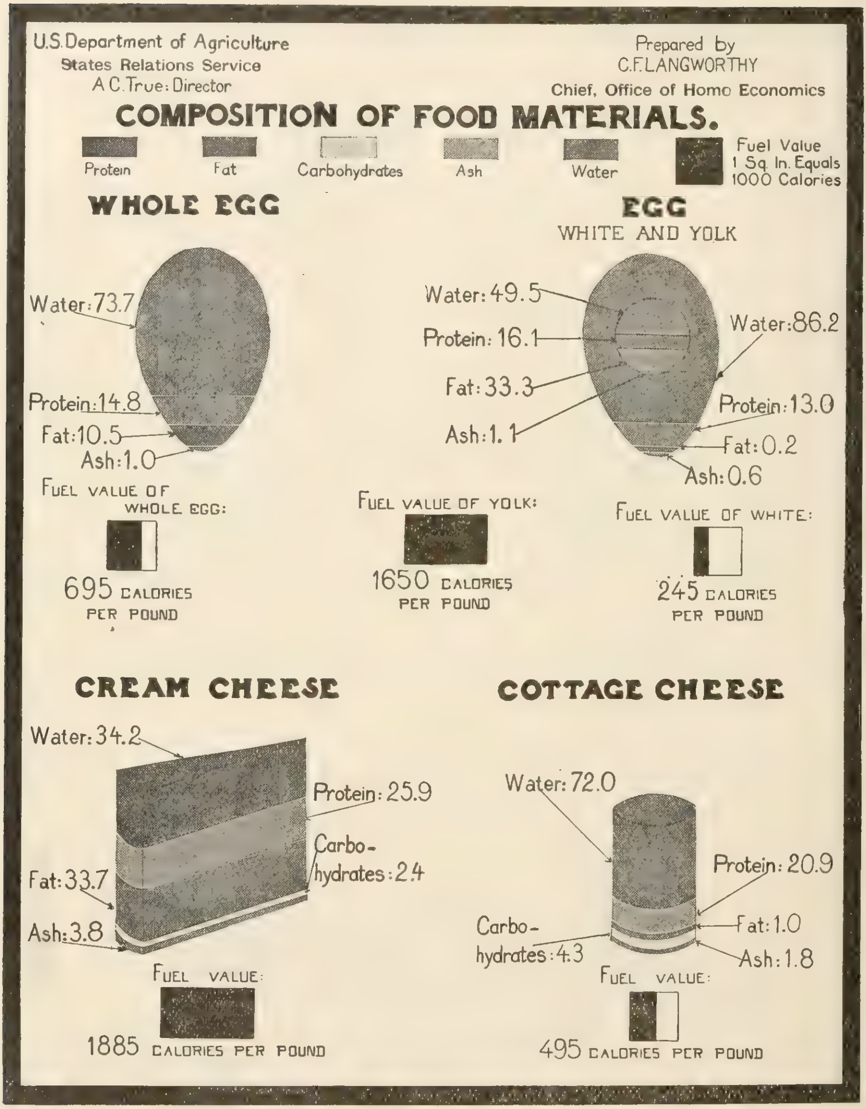
Many valuable lessons will come to our people and the nation on account of the war. Besides having learned how to manufacture dyes, toys and many other articles of commerce, formerly imported, the large amount of agitation and talk of food conservation will bring and has brought home the lessons of thrift and economy. It has come to my personal knowledge that there are many families whose grocery bills are no larger than they were a year or two ago, though all products have advanced in price, but the garbage pails in the city and the swill pail on the farm have not been so well filled. The use and saving of everything in way of food products has enabled the housewife to get along with a less quantity than formerly. To my mind this is true conservation.

ADVANTAGES OF DAIRYING

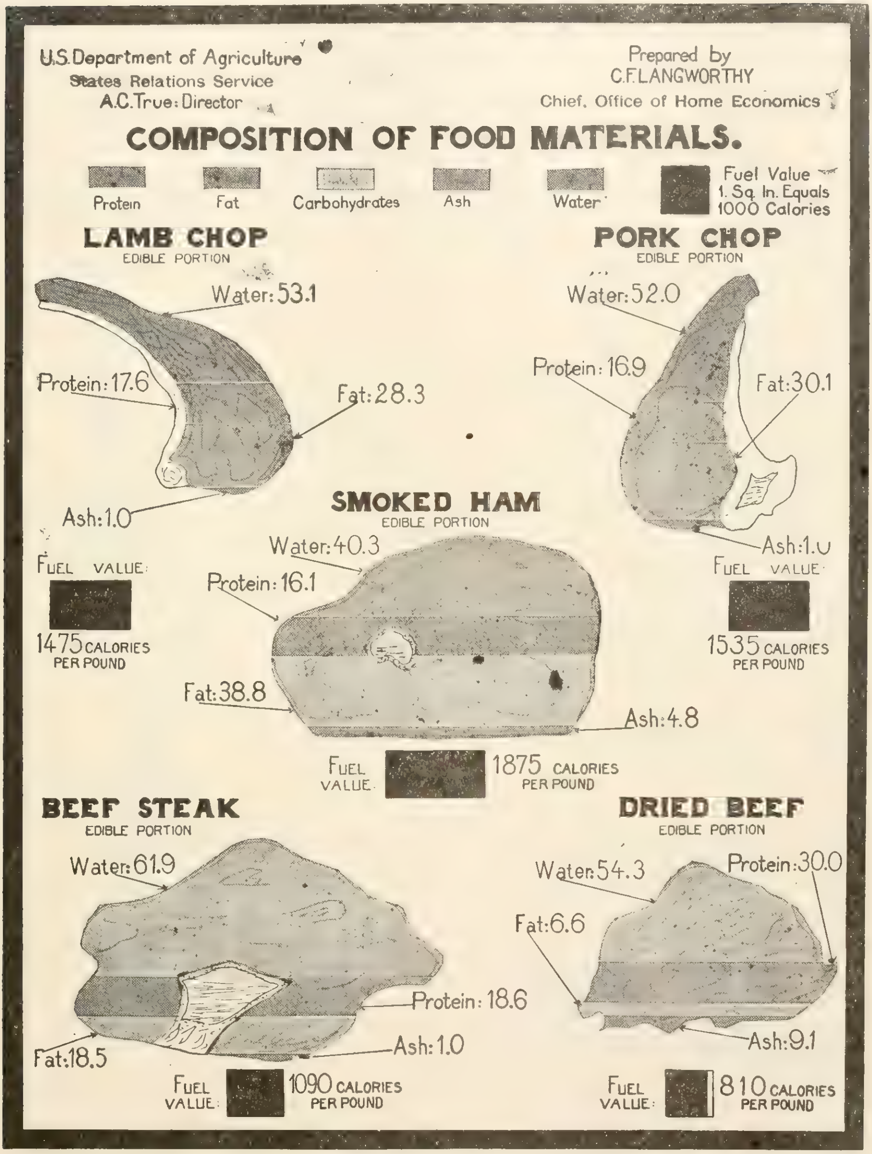
Dairying maintains the fertility of the soil.
Dairying furnishes a steady income.
Dairying furnishes a steady employment of labor.
The market for dairy products is steady.
Dairying utilizes unsalable roughage.
Dairying affords opportunity for increased income.
Dairying utilizes waste land.



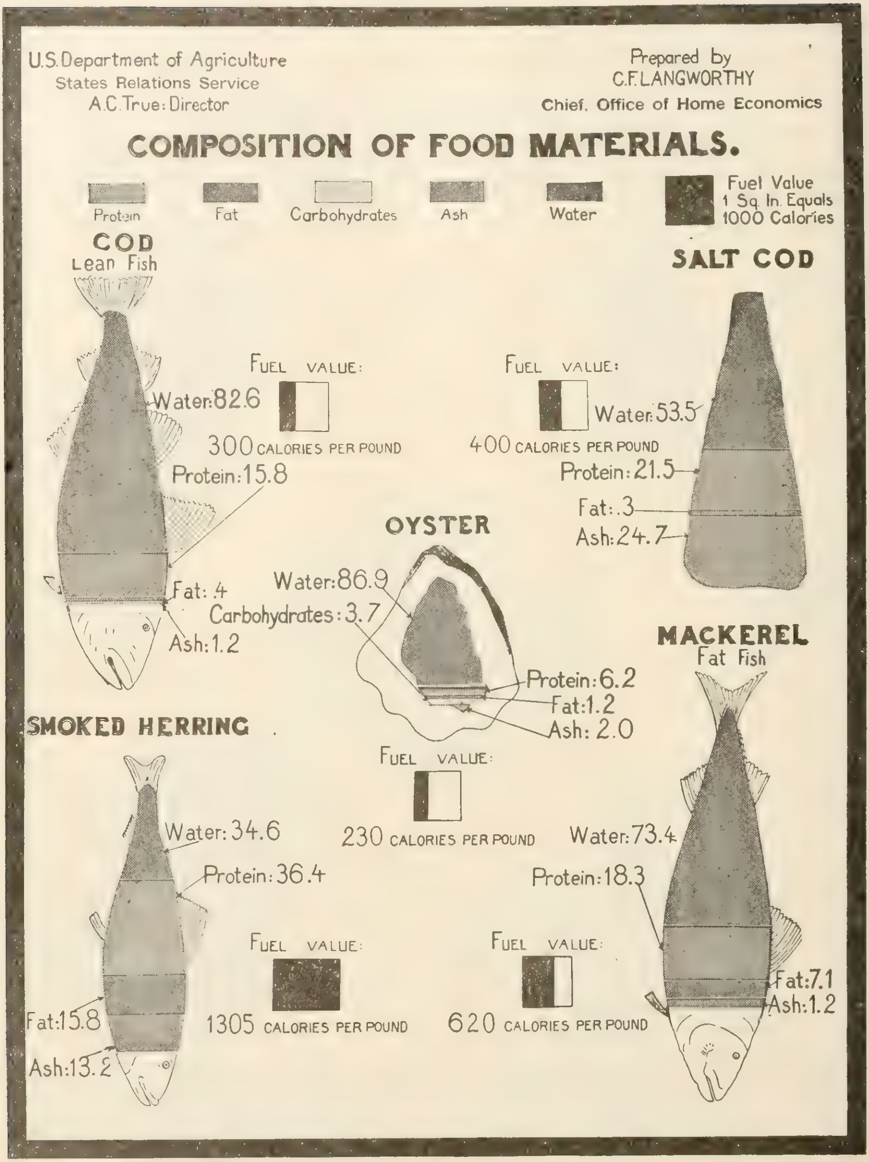
It will be seen from the above chart that while whole milk possesses an average fuel value of 315 calories per pound, skim milk has a value of 165 calories, or approximately one-half the value of whole milk. This results from the removal of the fat which has a fuel value of 4,080 calories per pound.



A pound of cream cheese contains the casein (a protein) and the fat of a gallon of average milk. It is, therefore, a concentrated food. If the fuel value of cheese is compared with that of meats (See the following illustration), it will be seen that the cream cheese possesses greater fuel value than the average cuts. It will also be seen that the protein content of the cheese is considerably greater than that of meat.



The meats, eggs and milk-products serve as the principal sources of protein on the average American table. The various cuts of meats differ in their protein content and their total fuel value, in proportion to the fat content and the amount of bone or other refuse material that they contain.



The extremely low food value of oysters as compared with the other sea foods should be noted. Oysters should be valued for their flavor and not for their food value. It requires about three pints of oysters to contain the amount of nutritive material contained in a quart of milk. Fish, in general, however, is a useful and economical food.

DAIRY EXTENSION.

It is my opinion that southern Iowa farmers do not appreciate the possibilities of dairying as a means of increasing the returns from and the value of their farms as do the farmers of the northern section of this state. It has been my desire for some time to carry on an educational campaign, in southern Iowa, having for its object the stimulating of interest in dairying, but our activities in other sections have made it impossible, until this fall, to go into this work on a scale that would insure success.

Recently plans have been formulated to do some constructive work in southern Iowa. Co-operation or rather concerted action on the part of the related organizations has been assured and an organization perfected which I feel will be able to get results.

The campaign will be made in the four southern tiers of counties of Iowa beginning November 5th. The forces behind the movement are: Dairy and Food Commission, State Dairy Association, E. S. Estel, dairy expert; Iowa State College, Prof. M. Mortensen, dairy department; United States Department of Agriculture, J. C. Cort, agent in dairying, Ames, Iowa; Association of Commercial Clubs of Iowa, R. H. Faxon, secretary; Chamber of Commerce, Des Moines, and commercial clubs of southern Iowa counties where the campaign is to be held.

There are twelve county agents among the southern Iowa county tiers who will be active in the campaign, as well as local bankers, business men and farmers.

The chief object of the campaign is to organize and to develop co-operative creamery associations, and where there are not sufficient cows to supply milk for a creamery, cheese factories will be encouraged. To encourage a better grade of milk cows as a basis of profit, cow testing associations will be organized. Thirty cow testing associations have already been organized in the state by the dairy extension department, Ames, and the results show the great value of this plan for developing profitable dairy herds. Through this channel the unprofitable cows are eliminated and turned into meat.

To build up the grade of cattle in various communities, bull clubs will be organized. The idea being to begin with the stock that is on the farm and build it up. In other localities calf clubs will be organized among the boys and girls on the farm. Where financial aid is needed or desired, bankers and others will be asked to co-operate. Many calf clubs have been already organized in some sections of the state.

The plan of the campaign will be to call meetings in the various localities through local commercial clubs. At these meetings and lunches, business men, bankers and farmers will be invited to meet with the various state organizations to consider the best plan of promoting the dairy and livestock industries in a given community.

After these preliminary meetings have been held and meetings arranged for the work throughout the county, two teams of speakers representing the various state and other organizations will be sent out according to the programs arranged. Autos will be used in conveying the speakers to all parts of the county. These meetings will be held at school houses, county seats and other points convenient to the farmers and their children.

Burt Co-operative Creamery, Burt, Iowa.

Among the speakers will be E. S. Estel, G. M. Lambert, J. P. Eves, Dr. O. P. Thompson and representatives of the various dairy and livestock associations will be asked to co-operate. Southern Iowa is especially adapted to dairying and livestock, and it is conceded that no section of the country can prosper indefinitely without livestock in some form.

Mr. Faxon has assured the state organizations that he will co-operate to the fullest extent. In his opinion whatever helps one part of the state, helps all, and nothing will be left undone by the commercial organizations to make a success of this campaign.

The headquarters of the campaign will be at the Dairy and Food Department. All inquiries pertaining to the campaign, its management, speakers, etc., should be directed to this office. I am enthusiastic about the matter as I have realized for several years the opportunity and need of developing the dairy and livestock industry in southern Iowa.

The aim of the speakers will be to emphasize all subjects discussed from the standpoint of practical farming—not from the standpoint of the use of money—because anyone can farm if he has plenty of money. A stereopticon lantern will be used to illustrate the subjects discussed, and the meetings will not only be instructive, but entertaining as well.

It is a well known fact that much Iowa land has been cropped year after year without attempting to maintain the fertility of the soil, and all authorities agree that diversified farming is absolutely essential if farming pays or if the soil fertility is to be maintained.

Farmers' Creamery, Monticello, Iowa.

COST OF PRODUCING MILK.

The setting of a fixed price for some of the more important and necessary foodstuffs has naturally raised the question, "What is a fair price for milk?" During the past month I have gone into this matter in an exhaustive manner and collected all facts both in this state and elsewhere which I thought would be of any value in reaching a conclusion, fair alike to producer and consumer.

The task has been a rather difficult one owing to the fact that very few milk producers keep books and are compelled to rely upon memory for the cost of operating their dairies. A few dairymen, however, do operate their establishments in a businesslike manner and know the amount and cost of each item of expense and the number of pounds of milk produced by each cow. It has been from such dairies that I have been able to arrive at the cost of producing milk.

The yearly average of all types of dairies, data from which are available, shows that in the production of 100 pounds of milk (11.88 gallons) the following items, feed, labor, etc., are required:

Grain, 44 pounds.	Hay, 50 pounds.
Silage, 188 pounds.	Bedding, 39 pounds.
Man hours, 2.42 hours.	

Clear Lake Creamery, Clear Lake, Iowa, 1st prize in landscape beautifying contest. Prize by Professor M. Mortensen.

In addition to the above, horse labor, interest, buildings, equipment and miscellaneous costs. These items must be credited with increase in stock, manure, and miscellaneous items. Investigation shows that these credits just about offset the various additional debits, leaving the above as representing cost of production, per 100 pounds. Using the above formula and knowing the cost of the feeds the producer chooses or is compelled to feed, it is possible to get at a figure very close to the average annual cost of production of milk in any section of Iowa. The cost of production during any one month has been estimated to be the following percentages of the average annual cost based upon the above formula.

January	119. %	July	83.7%
February	114.3%	August	94.2%
March	106.5%	September	96.7%
April	94.2%	October	109.2%
May	73.2%	November	118.3%
June	70.6%	December	120.3%

I believe this method of estimation to be reasonably accurate and acceptable. It has been used as a basis of adjusting the price of milk in several dairy sections.

Based upon a method similar to the above the producers and distributors in the vicinity of Chicago have recently agreed upon a temporary winter price of $3.22 per 100 pounds. Paying this price the Chicago distributors will deliver milk in Chicago at a price of 12 cents per quart. .

From all of the data I have been able to secure it would seem that a fair average annual cost of producing market milk in Iowa is between $2.75 and $3.00 per 100 pounds. There are, of course, many producers who are able to produce market milk at a lower cost and others who cannot afford to sell their milk on the basis of this cost. So long as the quality of the dairy herds and kind of management they receive vary over an extreme range from good to bad, the cost of producing milk with any individual herd or on any individual farm will remain an individual problem. Better herds, cows that will produce more milk in return for the feed consumed, and labor expended, is the principle factor in producing milk at a low cost.

The following table shows the cost price of producing 100 pounds of milk based upon the above percentage table and an annual average cost of $2.75 to $3.00 per 100.

	Min.	Max.	Average.
January	3.27	3.57	3.42
February	3.14	3.43	3.28
March	2.93	3.19	3.06
April	2.59	2.83	2.72
May	2.01	2.20	2.10
June	1.94	2.11	2.03
July	2.30	2.51	2.41
August	2.59	2.83	2.71
September	2.66	2.90	2.78
October	3.00	3.28	3.14
November	3.25	3.55	3.40
December	3.31	3.61	3.46
Annual average	2.75	3.00	2.875

The above table shows the cost price. It is of course appreciated that the producer is entitled to a reasonable profit. Assuming that a reasonable profit is 10% then the selling price for December milk based on an average cost of $3.00 would be $3.61 plus 36c, or $3.97 per 100 pounds.

This investigation has been made for the purpose of answering the many inquiries we have received during the past few months. We have not attempted to state what may be considered a reasonable profit for the producer or what milk should sell for, but to reach a fair conclusion as to the cost of producing market milk.

IOWA HERDS WIN AT NATIONAL DAIRY SHOW.

For several years past the National Dairy Show has offered a special prize for the best twelve animals of the following breeds owned in any state or foreign country: Ayrshire, Guernsey, Holstein and Jersey. It is rather unusual for one state to win two of these prizes in one year. It is still more significant for the same state to win two of the awards two years in succession.

Last year contributions from the herds of Geo. W. French, Iowana Farms, Davenport, and the Galloway-Messer Farms Company, Waterloo, Iowa, won the special prize for the Holsteins, while the herd of W. W. Marsh, Waterloo, won for the Guernseys. Cattle from these same herds were shown at Columbus, Ohio, where the 1917 show was held and won again.

When you take into consideration that the National Dairy Show is the world's greatest show of dairy cattle and that all of the best herds from Maine to Washington and Texas to Minnesota, as well as many imported cattle of the various breeds are shown it would appear that it was not worth while to go beyond the boundaries of our state for high class dairy cattle. A winning of this kind is of no small value.

MARKET MILK.

The market milk situation during the past year has presented many new problems which were given very little consideration during the pre-war years. Common with all articles of foods, food for man and feed for domestic animals, the market price of milk has climbed steadily upward.

Previous to the present war the creamery was the controlling factor in the price of market milk, in Iowa, and the condensary, except in its immediate neighborhood, was not a factor. Today owing to the unusual and heretofore unparalleled demand for condensed and evaporated milk, the condensaries are using every effort to obtain all available milk and are able to and do pay prices practically double that paid before the war and more than can be paid by the creamery or cheese factory at the prevailing prices for butter and cheese.

This increase in price, however, has not stimulated increased production owing to the fact that the price of a cow's feed has advanced more than has the price of her products, and farm labor is scarce and demands higher wages. Cows are also selling for such a high price for beef that many farmer-dairymen are of the opinion that they can make more money selling their surplus cows for beef and selling their grains, hay and ruffage on the open market than they can by feeding these products to the cow and selling her output. Noticeable evidence that this opinion prevails among the farmer-dairymen in several sections of the state was seen this fall while visiting producing districts and finding such a small percentage of the silos filled.

Practically all Iowa cities have experienced a shortage of milk during the past year. And while these shortages have in most cases been temporary, the distributors have been compelled to purchase milk in a new territory or buy it in competition with those willing to pay a high price. This situation has not only increased the original cost of milk to the distributor but there has been added an increased buying expense and greater transportation charges to bring the milk from newer and more remote districts.

It has been our experience in the past that strong competition in buying milk has a tendency to result in the production of lower quality milk and it has been a surprise to us to see the quality of the milk continue to be as good as that sold before there was so much competitive buying.

This year we continued the Market Milk Contest, as inaugurated last year at the Dairy Cattle Congress at Waterloo. Samples of milk were secured by the local inspectors in their respective cities, forwarded to this laboratory for official scoring and exhibited at that show.

It is gratifying to us to note that the average score of all these samples for this year was about 3.65 points higher than were the averages last year. It is also a noticeable fact that the higher average scores by cities and the highest increased scores over last year were found in those cities having milk inspectors who devote their entire time to inspection work and are paid adequate salaries.

The Department this year has not found any dairy situation needing correction that it could not handle under the present Dairy and Sanitary Laws. The Iowa Dairy Law has been enforced by the Dairy and Food Commissioner since 1892 and in its present amended condition seems to meet the emergencies as they arise. The basic principal of our law, that the state rather than the municipal authorities should set standards for the purity of market milk, has been embodied in the recent dairy laws of several states. This feature of the law is proving itself more valuable each year and states which grant to cities the power to adopt their own standards for quality are finding such plan undesirable.

The milk supply of our cities has been showing a gradual improvement, particularly the product of the larger city milk plant. Several modern city plants have been put in operation this year and there has been the normal amount of improvement of older plants. There has not been a single out-break of any disease in any of our cities which has been attributed to the milk supply.

The location of one of the largest army cantonments at Des Moines has been a tax on the already short supply of milk in the vicinity. The Department is co-operating with the Federal Public Health officials in the inspection of the cantonment supply and the dairies supplying it. The following regulations govern the sale of milk at the Camp:

RULES AND REGULATIONS EFFECTING SALE OF MILK AT CAMP DODGE.

GENERAL.

1. Milk shall conform to the requirements of all the State Laws of Iowa.
2. All milk dealers before offering milk for sale shall obtain a milk dealer's license from the State Dairy and Food Commissioner.
3. Licenses will be issued only after an inspection under the supervision of the State Dairy and Food Commissioner.

PRODUCTION.

1. All milk shall be obtained from healthy cows at least five days after and not less than fifteen days before calving.
2. Cows shall be kept clean and their flanks and udders shall be brushed or otherwise cleaned before milking and the cows shall be milked with clean, dry hands, or by clean, mechanical apparatus.
3. Milk shall be removed from the stable to a suitable place immediately after milking each cow and shall be immediately cooled to a temperature of or below 50 degrees F. and kept at or below said temperature until delivered.

4. All utensils and receptacles used as containers of milk shall be thoroughly cleaned and sterilized, preferably with steam, and shall be protected from contaminating conditions until used.

5. The proprietor of a dairy producing milk shall immediately give notice to the State Dairy and Food Commissioner of the presence of any communicable disease upon the premises or among his employees. No person having any communicable disease shall be permitted to handle milk.

TRANSPORTATION.

1. Milk shall be so transported that it shall not be liable to contamination from external conditions.

2. Milk shall be transported under conditions which will maintain a temperature of or below 50 degrees F.

3. No person having any communicable disease shall be employed in the handling of milk during transportation.

DISTRIBUTION.

1. No milk cotaining more than 500,000 bacteria per cubic centimeter, or any pathogenic bacteria, or having a temperature above 50 degrees F. shall be sold or offered for sale to the consumer.

2. All cans, bottles, or other containers used in the distribution of milk shall be thoroughly cleansed and sterilized before use and shall be kept from contamination until used and all dealers engaged in the distribution of milk shall possess proper appliances for the cleaning of utensils.

3. All premises upon which milk is pasteurized and all appliances used in pasteurizing shall be so constructed that they can be easily cleaned and all such premises and appliances shall be kept scrupulously clean.

4. No can, bottle, or other container intended for use in the distribution of milk shall be filled with milk elsewhere than upon the premises maintained and equipped for that purpose.

The department is also co-operating with the office of the Federal Food Administrator in securing data relative to the cost of producing milk.

CITY MILK LICENSES.

Table showing the number of milk licenses issued to city milk dealers for each year from 1908 to 1917. In each case the year ends on July 4th.

Year	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
Number	1,078	1,149	1,106	1,310	1,908	2,038	2,189	2,365	2,729	2,858

LOCAL STATE MILK INSPECTORS OF THE STATE OF IOWA.

Cities	Inspectors
Boone	Maurice Healy, M. D.
Burlington	W. F. Schroeder
Cedar Rapids	Phillip Pray
Council Bluffs	W. M. Hendrix
Davenport	H. J. High
Des Moines	W. B. Barney, Jr.
Clinton	J. H. Spence, D. V. S.

Dubuque	J. N. Graham, D. V. S.
Ft. Dodge	Francis Ludgate, M. D. C.
Iowa City	C. S. Chase, M. D.
Keokuk	Geo. R. Narrley, M. D.
Marshalltown	R. M. Allen, D. V. S.
Mason City	A. L. Wheeler, M. D.
Muscatine	C. J. Hackett, D. V. S.
Ottumwa	B. W. Van DerVeer
Sioux City	W. D. Hayes, C. P. H.
Waterloo	N. A. Talty, Ph. C.
Oskaloosa	

SAMPLES OF MILK EXAMINED BY LOCAL STATE MILK INSPECTORS WORKING FOR THE STATE DAIRY AND FOOD COMMISSION.

Boone	174
Burlington	945
Cedar Rapids	861
Council Bluffs	454
Clinton	573
Dubuque	524
Davenport	585
Des Moines	1,262
Fort Dodge	404
Iowa City	441
Keokuk	390
Marshalltown	46
Mason City	665
Muscatine	415
Ottumwa	673
Oskaloosa	247
Sioux City	979
Waterloo	985
Total	10,123

CREAMERY BUTTER.

Iowa's creamery butter for the year ending July 1, 1917, was made in 451 factories. This is the first year since I have been commissioner that there has not been a decrease in the number of creameries.

The make of butter for the year was 94,269,685 pounds or about three million pounds less than last year. If Iowa is to keep up the record made during the past few years strenuous effort will have to be put forth during the coming year by all forces for the up-building of the creamery industry. Although reports for the past year do not show a large decrease in the amount of butter made, the fact remains that during the summer months there has been a decrease and with the high prices offered for feed and the large number of farmers who have discontinued to milk, it does not seem that there will be any possibility that the rest of the year will make up for the loss sustained during the summer months.

We believe that the quality of Iowa butter is improving and we know that the conditions under which it is manufactured are each year becoming more acceptable. Our inspectors and buyers on the market report an improvement in the quality of butter made during the past year. Scoring contests also indicate an improvement.

Butter manufactured at Burt, Iowa, by Mr. Paul Macauley won first at the Convention of the National Creamery Buttermakers' Association at Milwaukee in competition with butter exhibited from fifteen states. The score on this butter was 98. Mr. Macauley again demonstrated his ability as a buttermaker by winning first prize at the Iowa Buttermakers' Convention in Mason City one month later. The score at this convention was 97½. We note, with a great deal of satisfaction, that the Burt Creamery is one of the creameries making Iowa Trade-Mark Butter.

The executive committee having control over Iowa Trade-Mark Butter has been criticised because of the fact that it has not been more liberal in allowing the use of the trade mark and the results of the scoring at the last buttermakers' convention show that the work of the board, while slow, has been very effective in securing makers of butter for the brand the highest class to be had. Butter entered by each of the five creameries which have been allowed the use of the trade-mark scored 95 or above at Mason City. Iowa Trade-Mark butter is not made by as many creameries as we had hoped, but the butter that does bear the trade-mark is the best butter to be had in this country.

Iowa creameries are improving each year. Since November 1, 1916, twenty-four new creameries, some of these costing as much as $15,000, have been built in new localities or to replace old creameries. The creameries which are being erected are not only ideal from the standpoint of convenience and sanitation, but they are credits to the communities in which they are located, when considered from the standpoint of their permanency of construction.

CHEESE AND CONDENSED MILK.

Particular emphasis has been placed upon the conservation of meat and wheat by the National Food Administration. These products being foods which contain not only elements necessary to the building up and developing of body tissues, producing heat and energy, but are products for which there is means of transportation.

Cheese being one of the best, if not the best, meat substitutes, we urged the housewives early in the season to adopt the policy of serving cheese in the place of meat at least one meal each week.

In order that our department would be in a position to be of assistance to those desiring information concerning the manufacture of soft cheese which could be made from skimmed milk, our dairy force was sent to Ames for instruction in soft cheese-making. Instructions were received in the making of cottage cheese from skimmed milk and buttermilk, also in the making of various types of soft cheese from sweet milk.

Our reasons for advocating cheese as a substitute for meat are based on the figures shown below:

CHEESE AS A SUBSTITUTE FOR MEAT.

Protein is the body-building material of our food. It is the most expensive food constituent.

FOOD	Price Per Lb.	Fuel Value Per Lb. Calories	Amount of Protein In 1 Lb.	10c Worth Will Contain Protein
Cream Cheese	35c	1885	4.15 oz.	1.18 oz.
Beef Steak	30c	1090	2.30 oz.	.77 oz.
Pork Chops	35c	1535	2.70 oz.	.77 oz.
Chicken Broiler	38c	305	2.05 oz.	.54 oz.
Ham	45c	1875	2.60 oz.	.58 oz.
Leg of Mutton	30c	890	2.40 oz.	.80 oz.
Eggs	35c doz.	635	2.10 oz.	1.00 oz.
Cottage Cheese	20c	495	3.35 oz.	1.65 oz.

Calculated from retail prices August, 1917.

Cards like the above were circulated at the State Fair and Waterloo Dairy Cattle Congress.

Iowa is falling considerably short of "doing her bit" insofar as her make of cheese and condensed milk is concerned. Reports from the wholesale houses of the state show that they bought last year over 2,785,579 pounds of cheese and only 6½ per cent of this amount was bought within the state. These same houses report the purchase of nearly 300,000 cases of condensed milk and purchased only about 5 per cent of this in Iowa. This does not necessarily mean that the factories of Iowa manufacture only 5 per cent of the milk consumed, but the fact remains that our wholesale houses are at present buying 95 per cent of their condensed milk outside the state. Figures compiled by the United States Food Administration show that the United States is now exporting sixteen times as much condensed milk as during the three years before the war and over sixteen times the amount of cheese. The significance of these figures to Iowa dairymen is that if Iowa is to do her share in helping to furnish dairy products, she must not only increase the production of milk so that she can supply her own demands, but she must also increase production so that she can help supply milk for the ever increasing demand for export purposes. This means that Iowa will have to put forth an effort to secure enough milk to operate fifty additional cheese factories and a sufficient number of condenseries to turn out 285,000 cases of condensed milk before she can attempt to furnish surplus cheese and milk for export.

The manufacture of cheese in this state is not gaining as fast as we had hoped. In fact, the make is less than it was for the same period last year. The total make for the year being 596,639 pounds. Due to the advance in the price of the product the value is considerably more. We are pleased to note an increase in the number of factories. However, some factories had discontinued operating. New factories not starting until later in the season explains in a measure the decrease in make.

The increase in the number of cheese factories is due to the efforts of D. J. Murphy of Waukon, Iowa, who has established ten new factories in Allamakee county. Mr. Murphy's idea in establishing factories in this county is that he considers the hilly portion better adapted to dairying than any other line of agriculture. We believe Mr. Murphy's idea is a good one and hope during the coming season to be able to use his undertaking as a good example to be worthy of the careful consideration of various communities in Southern Iowa which are especially well suited to pasture and dairying. In communities where there are not enough cows to support a creamery (less than two hundred, there are a number of these communities in Southern Iowa), we hope to see cheese factories located and will do everything possible to help them.

ICE CREAM.

The ice cream manufacturers are to be congratulated on the showing they have made during the past year. Despite the fact that raw materials have increased in price, 15 to 80 per cent, they have been able to make a remarkable showing in the gross output of ice cream for the year ending October 1, 1917. The output for the year amounts to 4,227,397 gallons, or about one million gallons less than last year. In looking through our list of factories, we find that 493 factories were licensed during the year. Seventy-two of these have discontinued business.

We have had very little trouble during the year in enforcing the butter fat standard, having found it necessary to institute less than six cases for violations. Last year we had twenty-two successful prosecutions.

We are glad to note also that dealers are giving more attention to cleaning ice cream containers before returning them. Eighteen paid fines for neglecting to attend to this detail. We believe that paying attention to the detail of cleaning cans is partly responsible for the present status of the ice cream business. Before attention was paid to cleaning these containers, the presence of dirty cans in places where the product was sold and on depot platforms had a tendency to discredit the sanitary conditions at the ice cream factories and their methods.

The department expects to do some work during the coming year which will enable us to be of service to the ice cream manufacturer who desires to reduce the bacterial count of his product.

ANALYSES.

During the year ending November 1, 1917, the laboratory has analyzed the usual number of samples with the exception of agricultural seeds which were large during the preceding year owing to the poor quality of seed corn.

The chemists have spent 42 days attending court cases brought by the Attorney General, County Attorneys and United States District Attorneys.

The following samples were analyzed during the year:

Cream and Milk	1611
Ice Cream	188
Paints and Oils	25
Miscellaneous Food Products	293
Samples for Attorney General and County Attorneys	273
Samples for Pharmacy Commission	30
Stock Foods	221
Seeds	102
Bacteriological Analyses	365
Total	3108

The general results of the analyses made in the laboratory show that there is a disposition among manufacturers to make their products comply with the law. Adulterated linseed oil is practically eliminated from the state except in cases where the dealer has purchased from mail order houses, who with rare exception sell adulterated oil. The analyses of stock foods, especially cotton seed meal, showed that many were falling below the guarantee of the manufacturer. This information led to a proper adjustment with the purchaser in practically every case. Several thousand dollars were collected as rebates by Iowa farmers as a result of our activities.

The following is the list of Condimental, Patented, Proprietary or Trade-marked Stock Foods analyzed by the Department during the past year, with the findings of the analyst:

Economy Hog and Cattle Powder manufactured by Economy Stock Food Co., Shenandoah, Iowa. Composed entirely of drugs.

S. C. Hog Remedy, L. E. Southwick, Kalona, Iowa. Composed entirely of drugs.

Newton's Heave & Remedy Cure. Composed entirely of drugs.

Biglers Tonic Powder. Composed of drugs mixed with feed.

Lee's Egg Maker, manufactured by Geo. H. Lee Co., Omaha, composed of drugs mixed with feed.

Arco-To-Ni, manufactured by Walker Medicine Co., Fayette, Iowa. Composed of drugs mixed with feed.

"Sapo" manufactured by Sapo Chemical Co., Dubuque, Iowa. Composed entirely of drugs.

"Santifuge" manufactured by C. W. Busby Co., Washington, Iowa. Composed entirely of drugs.

Stock Powder manufactured by Fox Chemical Co., Des Moines, Iowa. Composed entirely of drugs.

Gold Coin Cattle Tonic. Composed of drugs mixed with considerable quantity of feed.

Lee's Conditioner, manufactured by Geo. H. Lee Co., Omaha, Nebr. Composed of drugs mixed with a large per cent of feed.

Stock Food manufactured by Wilson's Stock Food Co. Composed entirely of drugs.

Heave Powder, manufactured by Standard Stock Food Co., Omaha, Nebr. Composed entirely of drugs.

Iowa Worm Powder. Composed entirely of drugs.

Fletcher's Stock Powder, manufactured by W. G. Fletcher, Williamsburg, Iowa. Composed of drugs mixed with feed.

Hog Tonic, manufactured by Dr. David Roberts. Composed of drugs mixed with feed.

Lee's Worm Powder, manufactured by Geo. H. Lee Co., Omaha, Nebr. Composed entirely of drugs.

Poultry Remedy, Kolosick Remedy Co., Washington, Iowa. Composed entirely of drugs.

"Uproco" Poultry Tonic, manufactured by Universal Products Co., Fairmont, W. Va. Composed of drugs and large amount of feed.

"Salyx" Medicated Salt, The Salyx Co., Cleveland, Ohio. Composed entirely of drugs.

Egg Producer, Pratt Food Co., Philadelphia, Pa. Composed of drugs mixed with feed.

Annual Regulator, Pratt Food Co., Philadelphia, Pa. Composed of drugs mixed with feed.

Stock Food, Furst-McNess Co., Freeport, Ill. Composed of drugs mixed with feed.

Stock Tonic, Dr. Hess & Clark, Ashland, Ohio. Composed of drugs mixed with feed.

Poultry Pan-a-cea, Dr. Hess & Clark, Ashland, Ohio. Composed of drugs mixed with feed.

Condition Powder, J. J. Fleck, Tiffin, Ohio. Composed of drugs mixed with feed.

Stock Powder, Iowa Stock Powder Co., Washington, Iowa. Composed entirely of drugs.

Sheep Remedy, Kolosick Stock Remedy Co., Washington, Iowa. Composed entirely of drugs.

Horse Remedy, Kolosick Stock Remedy Co., Washington, Iowa. Composed entirely of drugs.

Hog Fatner, Kolosick Stock Remedy Co., Washington, Iowa. Composed entirely of drugs.

Cattle Remedy—Kolosick Stock Remedy Co., Washington, Iowa. Composed entirely of drugs.

Stock Powder, Scientific Stock Raisers & Veterinarians Assn., Kansas City, Mo. Composed entirely of drugs.

Iowa Conditioner, Iowa Stock Remedy Co., Jefferson, Iowa. Composed of drugs and feed.

Western Hog Powder, Western Stock Remedy Co., Burlington, Iowa. Composed entirely of drugs.

Western Horse Powder, Western Stock Remedy Co., Burlington, Iowa. Composed entirely of drugs.

Poultry Conditioner, Great Western Remedy Co., Davenport, Iowa. Composed of drugs mixed with feed.

Cattle Conditioner, G. W. Remedy Co., Davenport. Composed of drugs mixed with a feed.

Hog Conditioner, G. W. Remedy Co., Davenport, Iowa. Composed entirely of drugs.

Horse Conditioner, G. W. Remedy Co., Davenport. Composed of drugs.

Standard Horse & Cattle Regulator, Standard Stock Food Co., Omaha, Nebr. Composed of drugs mixed with feed.

Prussian Hog Worm Powders, Prussian Remedy Co., St. Paul, Minn Composed of drugs mixed with a feed.

Diamond Worm Medicine, T. E. Welch, Ft. Dodge, Iowa. Composed entirely of drugs.

In addition to the above list a large number were analyzed for users, but as the brand of the product was not given their analysis is omitted.

INSPECTIONS.

During the year ending November 1, 1917, our inspectors have inspected a total of 22,107 establishments as follows:

Grocery	3,873
Meat Market	2,661
General Store	3,273
Bakery	809
Slaughter House	198
Restaurant	1,485
Coal Dealer	960
Elevator	1,320
Feed Store	540
Ice Cream Factory	661
Creamery	1,493
Dairyman	687
Farm Dairy	333
Confectionery	507
Wholesale Grocer	221
Seed Dealer	71
Bottling Works	64
Cream Station	2,182
Product	590
Miscellaneous	179
Total	22,107

WEIGHTS AND MEASURES.

"HELP WIN THE WAR." Every real American is subordinating all other matters these days. Our President through Mr. Hoover is impressing the citizens with the importance and prime necessity for conserving the food supply. We should, therefore, study carefully conditions around us, and especially within our own field of endeavor, with a view to ascertaining the most effective way of helping the Nation and our Allies.

Weights and Measures departments throughout the United States, striving to do their bit, are more closely than ever before checking the weights and measures of the thousands of commodities so sold. Few people realize the importance and wide scope of the weight and measure inspector's field. Iowa's billion dollar crop must be weighed. Her thousands of cattle and hogs and sheep must all be driven over the scales before being sent into the markets. The dairy and poultry products, garden truck, orchard crop, wool and the dozens of other rich products of Iowa are sold by the pound. Seven million tons or more of coal and thousands of tons of gypsum rock mined in Iowa are weighed over scales whose accuracy is determined by state weight and measure inspectors. And still we have not mentioned the countless millions of dollars worth of groceries and dry goods purchased by Iowa citizens annually nearly all of which are sold by weight or measure. Scarcely any items are sold but that come under the jurisdiction of the inspector at some point in the distribution.

During the year ending November 1, 1917, the department inspected 2,660 ''heavy'' scales, that is scales used by grain elevators, coal mines, retail coal dealers, railroad stock scales, etc. Of this number 326 were condemned for repairs or consigned to the junk heap as unfit for use in the trade. More than 300 were adjusted or the operators were instructed to make changes that would render them accurate.

Since the law became operative hundreds of scales and measures of various types have been confiscated. The educational displays made of them have served to awaken communities to a realization of the true importance of securing accuracy. Dairy inspectors have seized scores of Babcock Test scales and weights. Scale owners almost without exception welcome an examination of their scales since they know so well that inaccuracies favoring either the patrons or themselves are fatal to business.

The department does not have a complete record of counter scales inspected but many thousands have been examined by the general inspectors. Scale salesmen, anxious to dispose of their wares but nevertheless honestly desiring to improve Iowa scales, have called dealers' attention to defects. This has in many instances facilitated the work of the department. Merchants should understand, however, that there are still some unscrupulous concerns attempting through deception to secure orders for scales.

The Iowa department still is in its infancy as compared with departments in many other states. We have had much to learn and are only now fairly begun. The department has, however, done more than some of the states older in weight and measure law enforcement to take care of the small town and country communities. We have gone to every station and hamlet and even to the inland points where scales were being used in the purchase and sale of products. Inspectors have also gone to the farms when requested to do so. They have endeavored earnestly to improve the scales in use in every section of the state.

It is feared that in the past Iowa has been made a dumping ground for some worthless and many poorly constructed scales. It appeared necessary to draw the reins tighter. Accordingly, the department adopted in full the "Specifications and Tolerances for Weights and Measures and Weighing and Measuring Devices as adopted by the eleventh annual conference on the weights and measures of the United States, held at the Bureau of Standards, Washington, D. C., May 23 to 26, 1916, and recommended by the Bureau of Standards for adoption by the several states." The adoption of these rules, which must be complied with by those wishing to do business in Iowa, has worked a marked improvement, and Iowa very soon will have an average for accuracy not excelled by any state.

As competition has grown keener and prices risen higher the number of requests for scale inspections has doubled and trebled. The department has had one more inspector of "heavy" scales during the past year but it is still impossible to answer requests as promptly as should be done and it now appears that a fourth man will be necessary with the opening of spring.

That the cheapest device is often the most expensive is a fact well known by most merchants. A grocer, coal dealer, miller, farmer or other merchant or individual whose entire business or return for labor depends upon the scales employed should certainly invest enough money to secure a good instrument. But after purchasing a thoroughly good scale he is only started. Proper installation, including a substantial foundation and proper drainage are absolutely necessary. These things done, the operator should give the scale the attention it so well deserves. Many a man has found too late that his profits were gone because his scale did not weigh accurately.

If the writer were operating an Iowa farm entailing as is required an investment equal to that of the average bank, he would certainly buy from some responsible concern the best scale to be found. If this seemed not to be practicable he would demand that the elevator scales, stock scales, or others over which he bought and sold, be constructed as the law provides, that they be properly installed and cared for, and that they be examined frequently by a representative of the state department. What is said concerning the farmer applies with equal force to every one who buys or sells any commodities the price for which is determined by weight or measure. "The average citizen buys an auto and builds a shed over it but when he buys a scale he digs a hole in the ground and buries it."

Housewives should have scales and check the weight of every purchase. This will detect errors of honest merchants and find the crooks of whom there are still a few even in Iowa.

Not the least effective branch of the department's work is the weighing of various commodities to determine the accuracy of the label or of the weigh ticket.

The statutes authorize inspectors to "enter or go in or upon any stand, place, building or premises; or to stop vender, peddler, junk dealer, coal wagon, ice wagon, or any dealer whatsoever, for the purpose of making the proper test." The irregularity of such inspections makes it impossible for dishonest dealers to know when their loads may be reweighed and this uncertainty makes them more cautious and renders the work of the inspector more simple.

The department is anxious to serve the needs of the people and solicits requests for assistance and suggestions as to how conditions may be improved and every buyer and seller insured full weight and measure.

Iowans almost without exception will count it a duty, yes a privilege, to be conservative, thrifty and honorable in every transaction dealing with food stuffs, ammunition which America will need in abundance to bridge the greatest crisis in the nation's history and make the world in truth safe for democracy.

THE WORK OF THE IOWA STATE DAIRY ASSOCIATION, 1917.

The work of the Educational Department of the Iowa State Dairy Association has been changed to a considerable extent during the past year. Since the Association received its first appropriation eight years ago most of its work has been devoted to the preliminary and very necessary task of creating an interest in dairying among all of the farmers of the state. This work was accomplished by the operation of seventeen special dairy trains. These tours have covered every railroad in the state and have provided dairy meetings of some kind in practically every town.

That this preliminary work has brought results is indicated by the increased demand for speakers on dairy subjects to attend farmers' institutes, short courses, and other community gatherings. It has also resulted in an increased interest in the organization of farmers' co-operative creameries, cow testing associations, breeders' associations, and calf clubs.

During the year ending November 1, 1917, representatives of the association met 198 audiences in 51 counties. The records of attendance show that 31,600 people were reached. Of the 198 audiences 43 were in attendance at farmers' institutes, 51 at dairy and creamery meetings, and the remaining 104 at meetings conducted by the Dairy Association directly.

The Chicago & Northwestern Railroad Company co-operated with the Dairy Association in the operation of a special dairy institute train over its line in northwestern Iowa during the month of February. The equipment of this train included a baggage car and a coach which were used to carry specimens of the leading dairy breeds and exhibits of products, dairy machinery, charts, etc., to illustrate the importance of dairying and the most up-to-date methods of feeding and breeding for the economical production of milk. This equipment, as in previous years, was furnished by the railroad company to the Dairy Association without charge.

Full day meetings were held at the majority of the towns vissited. In addition to the regular lecture work, community dairy shows, boys' and girls' judging contests, milk record contests, etc.. were conducted.

ORGANIZATION OF CALF CLUBS.

As a means of starting dairy herds in especially the southern half of the state, the organization of grade dairy calf clubs was begun in March. The purpose of organizing these clubs was to get the younger generation interested in the dairy business by supplying a means whereby they could own a dairy heifer as the foundation for a future herd on their farm.

It was realized in the beginning that the calves introduced into the community would become the foundation stock for many herds and that the very best type should be used. Eight clubs have thus far been organized—for these more than 600 calves have been purchased and allotted. Four hundred of these were heifers from six to nine months of age, while 200 have been young calves averaging from four to six weeks of age. They were bought by representatives of the Dairy Association and a representative from each community in which the clubs were organized.

The organization of these clubs is made possible by the broad-minded constructive policies that many of our banks and commercial clubs are adopting. They, with the assistance of the State Dairy Association, advertise the plan of organization thoroughly in the community and get in personal touch with those whom they believe have children of the age that would or should be interested in the movement. Very little trouble has been experienced in any communities in securing enough members to take one carload of calves.

Holstein Calf Club of New Sharon.

In this organization work every precaution was taken to safeguard the members. The calves were sold to the boys and girls at the actual purchase price plus the cost of insuring against any possible loss by death for the period of the club, which varied in length from six months to one year. Each bank accepted the child's note for this amount. These calves varied in age from six months to a year. They were all tuberculin tested and great care was taken to select them from clean, high producing herds.

The breeds used in these clubs varied so that all four of the leading dairy breeds were represented. The club at What Cheer, which was the first to be organized, was made up entirely of Holsteins.

The northwestern part of Iowa is represented in this movement by a large club at Sutherland in O'Brien county which is made up of Holsteins and Ayrshires. The clubs at Barnes City and New

Sharon, both in the southeastern part of the state, are also made up entirely of Holsteins. At Brighton, in Washington county, the club is composed of Guernsey calves exclusively.

The club organized at Waterloo, having a membership of 170 and having all four breeds—the Guernsey, Holstein, Ayrshire and Jersey, represented has the distinction of being the largest in the state. The clubs at Wellman and Iowa City are composed of the younger Holstein calves, while the one at Gilmore City is composed of both Holstein and Guernsey calves.

The plan which the Dairy Association is working upon is to develop herds from these heifer calves by introducing pure-bred bulls of the breeds represented. One of the agreements entered into by the child signing a membership application is that the heifer calf shall be bred to a pure-bred bull of the same breed but not before the heifer is sixteen months old. The purpose of this ruling, of course, is to prevent crossing and mixing of breeds as well as to further the grading up of these heifers.

At the end of the club's duration, the members have their choice of two plans. They may either pay the amount of the note and keep the calf as their permanent property or sell it at public auction and receive the difference between the selling price and the amount of the note as their profit. One purpose of the club is to arouse in the boy and girl sufficient interest that they will prefer to keep the heifer for a milk cow rather than to sell her and

Guernsey Calf Club of Brighton.

let some one else reap the benefits. It is encouraging to find that at least three-fourths of the members have taken these calves with that purpose in mind.

A show will be held in connection with the sale at the end of the period. Many premiums are to be awarded to the boys and girls who have made the greatest development and improvement in their calves during this time.

COMMUNITY DAIRY SHOWS.

In order to make the work as practical as possible, community dairy shows were conducted wherever the business men and farmers would co-operate in making such shows a success. At most places the merchants and commercial clubs gave their hearty co-operation and offered attractive cash and merchandise prizes for the best animals exhibited.

The dairymen and farmers also contributed their share by bringing in representative cows from their herds. All breeds of cattle, whether grade or pure bred, were shown which gave an opportunity for the comparison of the different breeds and types.

The cows were placed in accordance with their milking qualities and the premiums awarded after every animal had been gone over and full explanation made of the defects and good points.

The community dairy shows have been a means of bringing home to the owners of the cows shown the difference between the profitable and unprofitable animal. Those who took part were encouraged to determine further the real value of their herds by weighing and testing the milk. Considerable friendly rivalry was created among the exhibitors, which will undoubtedly in many instances lead to better feed and care for the average herd of milk cows.

CARE FOR THE AVERAGE HERD OF MILK COWS.

Boys and girls between the ages of 12 and 18 years who could weigh and test milk from three or more cows for three consecutive months were again given an opportunity to enter the third milk record contest conducted by the Association. Although the number of contestants was smaller than usual, there was a great deal of interest in the work and many commendable reports and essays were received.

Each contestant was required to compile a monthly report of the production, cost of feed, and net profit of every cow tested.

In some instances members kept records on as high as 18 cows. An essay explaining the work was prepared at the end of the three months.

The manner of grading the reports was based upon the efforts put forth by the contestants and not upon the production of the cows. Any changes which improved the rations, or made the production of milk more economical were recognized, but it was realized that the contestants had no opportunity to select the cows with which they were required to work.

Eight pure bred dairy bull calves, two of each of the Ayrshire, Holstein, Jersey, and Guernsey breeds, were awarded to those standing highest in the work. Twenty additional cash prizes were awarded.

SCHOOL PROGRAMS AND CONTESTS.

At all the meetings promoted by the Association itself school programs were held. In many instances the rural schools were dismissed and the students attended the assembly meetings which were held in the largest town schoolhouse. At these, general lectures on the importance of agricultural training with special reference to dairying were given.

At the completion of the lectures at the high school, the students accompanied by the instructors, were taken to the barn where the cattle for the community dairy shows were kept, and instruction given in judging. The cow demonstration was given first to explain the characteristics of the correct type of dairy cow. Then the boys and girls were supplied with directions and all required to compare the class of animals brought before them. After inspecting the animals for twenty minutes, the students wrote their placing together with the reasons for same on the direction sheet and these were handed to the lecturer in charge. Discussions were then held and all questions answered.

The business men at the various towns gave prizes for the boys and girls who excelled in judging. The students generally were very much interested in the work and expressed a desire to study their agricultural work in school in a similar way. During the winter of 1916-1917 nearly 5,000 boys and girls were reached in this manner.

OTHER WORK.

During the spring and fall months when the work is urgent on the farm and it is therefore difficult to hold meetings, bulletins are sent to the local newspapers. These contain timely suggestions which assist the farmer in solving the problems which confront him with reference to his dairy herd. They are written with the idea of assisting the creameries in improving the quality and quantity of raw product. The newspapers are lending their assistance by giving the information a prominent place in their columns.

A service department to assist the man just entering the dairy business to locate and purchase foundation animals for his herd was also conducted. The object of this department is to bring the man who has dairy cattle for sale in contact with the man who wishes to buy. A large number of farmers have taken advantage of this service and many of them have been enabled to purchase the animals they desired at a much smaller expense than if they had attempted to locate the stock themselves. It has been a means of encouraging the purchase of pure bred dairy sires to head herds of ordinary type in many sections of the state.

One of the important features of the work has been the establishment of the Dairy Cattle Congress in conjunction with the annual convention. This year the show was unsurpassed by any similar event. It brings dairy cattle breeders with their choice animals from every part of the United States and offers the farmers of not only Iowa, but the Mississippi Valley an opportunity to become acquainted with the various breeds. Premiums are offered for butter, cheese, and milk, which in addition to the display of dairy appliances and farm implements, bring thousands of prosperous farmers. The convention proper is held in a building on the grounds, the subjects of interest to the buttermakers, creamery men and dairymen are discussed by authorities of national reputation.

The Iowa State Dairy Association in all of its work has been assisted in a large measure by the other dairy interests of the state. Chief among these is the Dairy and Food Department which had a number of speakers on the trains throughout the tours and also co-operated in all of the other work. The individual dairymen have also sacrificed portions of their time to educating their brother farmers in better methods of and giving them the benefit of valuable experience. The Dairy Department of Iowa State College and the State Veterinary Department have also given a great deal of assistance from time to time.

HUMAN FOOD PRODUCED BY FARM ANIMALS FROM 100 POUNDS OF DIGESTIBLE MATTER CONSUMED:

Animal	Edible Solids Produced
Cow (milk)	18.0 pounds
Pig (dressed)	15.6 pounds
Calf (dressed)	8.1 pounds
Poultry (eggs)	5.1 pounds
Poultry (dressed)	4.2 pounds
Lamb (dressed)	3.2 pounds
Steer (dressed)	2.8 pounds
Sheep (dressed)	2.6 pounds

EXPENSES YEAR ENDING OCTOBER 31, 1917.

Name	Salary	Expenses	Total
W. B. Barney	$ 2,700.00	$ 386.67	$ 3,086.67
†B. C. Iliff	222.60		222.60
†P. W. Crowley	825.00	165.44	990.44
E. L. Redfern	2,400.00	28.89	2,428.89
R. E. Clemons	1,500.00	937.67	2,437.67
H. W. McElroy	1,500.00	834.47	2,334.47
F. W. Stephenson	1,400.00	879.28	2,279.28
B. O. Brownlee	1,470.82	1,012.33	2,483.15
T. A. Clarke	1,600.00	993.70	2,593.70
G. M. Lambert	1,600.00	1,004.58	2,604.58
O. P. Thompson	1,600.00	1,336.82	2,936.82
H. E. Forrester	1,600.00	1,189.18	2,789.18
L. L. Flickinger	1,600.00	1,039.72	2,639.72
L. P. Anderson	1,600.00	868.92	2,468.92
E. C. Lytton	1,800.00	92.08	1,892.08
M. E. Flynn	1,600.00	766.70	2,366.70
J. W. Milnes	1,600.00	775.99	2,375.99
†C. Ottosen	1,480.93	961.47	2,442.40
S. O. Van de Bogart	1,600.00	488.53	2,088.53
J. S. Bittner	1,600.00	632.19	2,232.19
C. S. Bogle	1,600.00	892.35	2,422.35
C. O. Frazer	1,600.00	951.06	2,551.06
A. B. Briggs	1,600.00	1,360.04	2,970.04
E. J. Nolan	1,600.00	1,919.90	3,519.90
Wm. H. Harrison	1,817.08	65.83	1,882.91
G. H. Chittick	1,399.30	98.70	1,498.00
A. W. Day	1,233.32		1,233.32
R. V. Murphy	1,033.31		1,033.31
Margie Garrity	900.00		900.00
Elma Schnack	900.00		900.00
†Vera Acklin	787.50		787.50
†Florence Gallarno	112.50		112.50
J. W. Lytton	800.00		800.00
Laboratory Expense		607.37	607.37
Weight and Measure Expense		4,004.42	4,004.42
Inspection Fee Tags		1,792.60	1,792.60
Milk Agent's Expense		636.03	636.03
Milk Agent's Fees		4,124.00	4,124.00
Miscellaneous Office Expense		1,679.46	1,679.46
Telephone		79.21	79.21
Telegraph		25.48	25.48
Electricity		19.89	19.89
Drayage		144.78	144.78
Express		136.52	136.52
Total	$46,682.36	$32,942.27	$79,624.63

†Employed less than a year.

DEPARTMENT FINANCES.

FEES RECEIVED YEAR ENDING OCT. 31, 1917.

Inspection Fee Tags	$19,625.31
Seed Analyses	24.50
Feeding Stuffs Analyses	57.00
Stock Food Licenses	3,825.00
Babcock Test Licenses	6,402.50
Scale Tag Licenses	4,185.00
Scale Inspection Fees	7,897.03
Sanitary Law Licenses	13,080.00
Milk Licenses	3,130.00
Cold Storage	275.00
Commercial Fertilizer Licenses	260.00
Butter Trade-Mark Expense of Wrappers and Labels	54.14
	$58,815.48

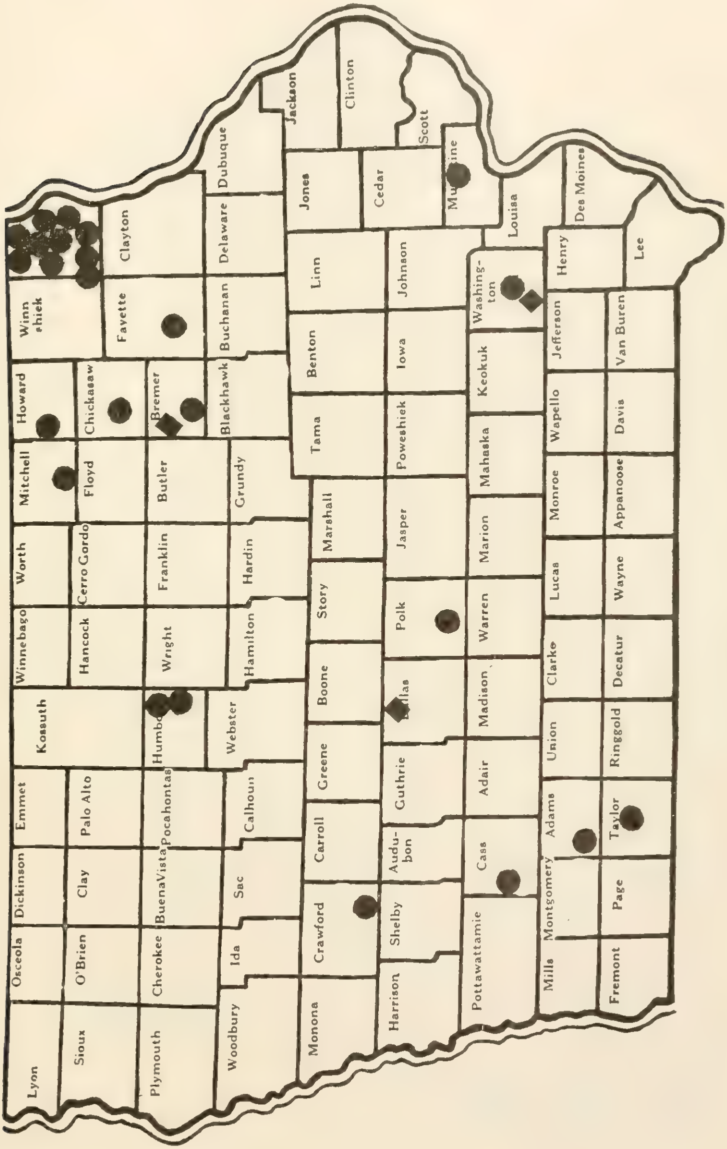
CREAMERY STATISTICS OF IOWA.

SHOWING POUNDS OF MILK AND CREAM RECEIVED, POUNDS OF BUTTER MADE AND DISPOSITION OF SAME, FAR AS REPORTED.

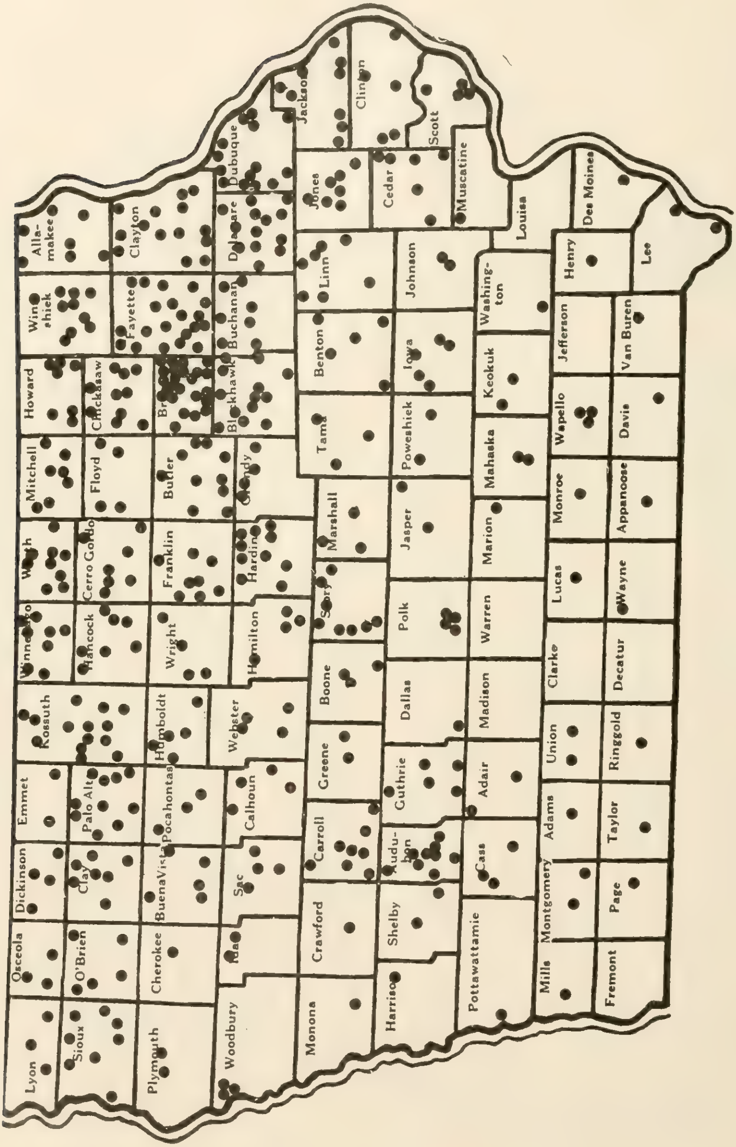
County	Number of creameries reported	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold outside the state	Pounds sold in Iowa
Adair	2	372,981	1,602,664	642,673	30,941	540,168	71,564
Adams	1	----------	326,880	126,220	10,780	95,643	19,797
Allamakee	7	----------	6,836,325	1,763,658	59,203	11,216,871	147,033
Appanoose	1	155,742	17,600	6,127	57	1,014	5,056
Audubon	8	93,378	2,492,638	943,673	70,796	820,395	61,242
Benton	5	180,000	703,869	367,501	4,365	126,564	63,250
Black Hawk	13	17,857,791	2,677,328	2,515,793	131,338	1,564,308	823,290
Boone	3	----------	605,751	217,446	14,393	83,289	119,729
Bremer	23	82,690,124	736,436	3,611,588	308,809	2,835,538	169,909
Buchanan	7	11,993,955	2,239,979	2,366,267	124,801	2,247,641	138,678
Buena Vista	5	299,530	1,480,430	505,474	27,408	384,351	100,561
Butler	10	6,830,050	3,071,677	2,415,520	114,136	1,110,847	135,773
Calhoun	4	12,137	548,050	399,079	24,595	346,272	28,201
Carroll	8	189,197	2,041,814	828,328	29,156	464,930	315,001
Cass	3	----------	1,146,793	819,906	1,882	470,993	159,693
Cedar	6	10,341	3,303,075	992,405	57,351	651,321	297,771
Cerro Gordo	7	706,887	6,866,224	2,246,833	48,368	2,172,829	81,829
Cherokee	1	----------	21,723	69,875	1,670	66,860	1,345
Chickasaw	10	7,385,719	6,702,575	2,160,925	176,286	2,153,532	191,445
Clarke	------	----------	----------	----------	----------	----------	----------
Clay	8	125,000	1,580,065	682,530	44,180	569,084	79,888
Clayton	14	14,859,465	5,450,642	2,532,851	133,429	2,196,465	240,977
Clinton	5	239,714	2,921,147	1,036,560	16,333	861,526	120,490
Crawford	1	108,890	486,175	228,271	178	222,787	11,250
Dallas	1	1,000	2,000	----------	----------	----------	----------
Decatur	------	----------	----------	----------	----------	----------	----------
Delaware	13	12,617,872	4,408,189	1,862,243	163,842	1,428,726	124,198
Des Moines	1	----------	----------	----------	----------	----------	----------
Dickinson	4	1,500	849,568	846,262	16,121	727,506	102,835
Dubuque	13	6,495,343	4,062,017	4,155,957	117,137	1,572,089	1,287,606
Emmett	2	1,937,324	1,138,588	427,480	38,721	373,321	15,418
Fayette	20	25,495,010	9,350,815	3,029,063	206,355	2,434,373	264,771
Floyd	4	10,340	1,125,681	651,173	49,024	4,963,971	155,752
Franklin	8	23,825	2,327,798	929,272	55,803	723,545	71,995
Fremont	------	----------	----------	----------	----------	----------	----------
Greene	2	124,390	221,955	86,742	10,447	62,543	53,852
Grundy	4	491,828	1,440,900	815,625	51,244	741,616	37,050
Guthrie	4	202,810	972,846	354,737	18,565	268,286	68,886
Hamilton	5	959,862	1,539,845	197,891	25,253	117,878	54,760
Hancock	7	37,061	3,465,729	1,132,110	54,807	996,465	79,993
Hardin	11	503,491	3,843,148	1,838,556	102,649	1,527,855	224,298
Harrison	1	----------	----------	----------	----------	----------	----------
Henry	1	----------	----------	400,000	----------	----------	36,400
Howard	9	----------	4,288,228	1,711,068	1,030,843	1,545,303	103,657
Humboldt	5	166,442	1,196,763	475,834	18,950	323,583	101,275
Ida	2	----------	525,000	76,427	500	55,927	10,000
Iowa	5	----------	1,450,378	255,554	29,234	161,953	65,367
Jackson	9	143,437	3,472,301	1,390,613	29,413	1,158,744	100,926
Jasper	2	----------	204,580	75,491	72,845	2,646	72,845
Jefferson	------	----------	----------	----------	----------	----------	----------
Johnson	1	----------	1,118,010	401,915	----------	300,000	100,000
Jones	7	838,052	6,639,275	2,110,002	118,712	1,752,260	38,992
Keokuk	2	49,195	801,217	318,396	1,000	264,396	53,000
Kossuth	14	179,686	4,493,511	1,516,924	151,084	1,231,841	150,187
Lee	1	21,870	27,702,850	1,206,120	----------	1,110,518	106,665

CREAMERY STATISTICS OF IOWA—Continued.

County	Number of creameries reported	Pounds of milk received	Pounds of cream received	Paunds of butter manufactured	Pounds sold to patrons	Pounds sold outside the state	Pounds sold in Iowa
Linn	7	429,871	4,801,186	1,738,938	50,886	1,421,212	266,830
Louisa							
Lucas	1			60,016		4,016	56,000
Lyon	3	38,000	626,517	730,477	3,142	694,693	32,642
Madison							
Mahaska	2		517,628	257,790		165,527	92,263
Marion	1			20,835			
Marshall	3	226,537	1,634,525	618,382	22,713	439,189	155,580
Mills	1			55,869	1,100	38,769	76,000
Mitchell	8	670,425	8,192,934	1,224,689	96,405	1,085,175	43,057
Monona	1			10,000		10,000	
Monroe	1			50,000		50,000	
Montgomery	1	353,104	478,670	163,802		93,807	
Muscatine	1	57,559	375,334	87,168	3,247	48,334	39,428
O'Brien	5	109,800	1,802,786	624,176	14,378	508,659	110,940
Osceola	3	54,750	810,572	310,625	14,935	240,549	7,141
Page	1	241,140	596,689	752,156		651,846	9,000
Palo Alto	10	1,402,947	3,228,243	1,299,908	147,250	1,190,733	109,242
Plymouth	2		279,081	97,891	2,981		94,000
Pocahontas	3	156,000	512,664	196,140	5,009	155,204	36,647
Polk	4		8,572,814	4,689,699		775,146	3,914,553
Pottawattamie	1		1,153,400	1,441,589		1,173,600	269,950
Poweshiek	2	221,433	524,376	188,384		90,570	
Ringgold	1	15,000	255,756	71,106	421	17,399	53,286
Sac	4		172,071	222,673	13,382	136,387	55,750
Scott	4		911,139	649,183		136,387	378,247
Shelby	2		365,487	153,895	15,310	137,565	1,020
Sioux	9	403,555	5,741,639	1,963,446	56,807	1,601,550	110,792
Story	8	440,162	2,059,925	661,211	80,811	498,088	126,275
Tama	3		923,549	581,345	2,683	435,185	143,977
Taylor	2			475,834	16,125	403,459	56,250
Union	2	307,317	825,688	843,600	768,508	769,389	70,185
Van Buren	1			83,820	5,237		
Wapello	3	17,500	10,682,800	549,834		666,391	
Warren							
Washington	1			9,875		6,400	3,475
Wayne	1		2,239,513	736,849	156,955		
Webster	4	365,000	768,990	388,966	9,492	89,453	290,021
Winnebago	8	1,407,794	3,765,515	2,206,662	262,031	1,129,687	205,867
Winneshiek	11		6,703,192	2,160,959	5,704,768	1,997,889	129,612
Woodbury	3	3,177,086	30,161,086	12,188,977	1,800	1,255,080	465,444
Worth	8	60,862	3,551,147	1,103,121	70,805	969,611	62,665
Wright	4	43,844	1,777,803	334,074	31,663	207,192	96,219
Total	451	205,420,165	242,378,361	94,269,685	4,285,135	81,311,017	8,673,543


Lyon
Osceola
Dickinson
Emmet
Kossuth
Winnebago
Worth
Mitchell
Howard
Winneshiek
Allamakee
Sioux
O'Brien
Clay
Palo Alto
Hancock
Cerro Gordo
Floyd
Chickasaw
Fayette
Clayton
Plymouth
Cherokee
Buena Vista
Pocahontas
Humboldt
Wright
Franklin
Butler
Bremer
Buchanan
Delaware
Dubuque
Woodbury
Ida
Sac
Calhoun
Webster
Hamilton
Hardin
Grundy
Blackhawk
Monona
Crawford
Carroll
Greene
Boone
Story
Marshall
Tama
Benton
Linn
Jones
Jackson
Clinton
Harrison
Shelby
Audubon
Guthrie
Dallas
Polk
Jasper
Poweshiek
Iowa
Johnson
Cedar
Scott
Muscatine
Pottawattamie
Cass
Adair
Madison
Warren
Marion
Mahaska
Keokuk
Washington
Louisa
Mills
Montgomery
Adams
Union
Clarke
Lucas
Monroe
Wapello
Jefferson
Henry
Des Moines
Fremont
Page
Taylor
Ringgold
Decatur
Wayne
Appanoose
Davis
Van Buren
Lee

Locations of Iowa cheese factories (●) and condenseries (★).


Allamakee
Clayton
Dubuque
Jackson
Clinton
Scott
Winneshiek
Fayette
Delaware
Jones
Cedar
Muscatine
Howard
Chickasaw
Bremer
Buchanan
Linn
Johnson
Louisa
Des Moines
Mitchell
Floyd
Butler
Blackhawk
Benton
Iowa
Washington
Henry
Lee
Worth
Cerro Gordo
Franklin
Grundy
Tama
Poweshiek
Keokuk
Jefferson
Van Buren
Winnebago
Hancock
Wright
Hardin
Marshall
Jasper
Mahaska
Wapello
Davis
Kossuth
Humboldt
Hamilton
Story
Polk
Marion
Monroe
Appanoose
Emmet
Palo Alto
Pocahontas
Webster
Boone
Warren
Lucas
Wayne
Dickinson
Clay
Buena Vista
Calhoun
Greene
Dallas
Madison
Clarke
Decatur
Osceola
O'Brien
Cherokee
Sac
Carroll
Guthrie
Adair
Union
Ringgold
Lyon
Sioux
Plymouth
Ida
Crawford
Audubon
Cass
Adams
Taylor
Woodbury
Monona
Shelby
Harrison
Pottawattamie
Montgomery
Page
Mills
Fremont

Location of Iowa's 451 creameries.

PART VI

Excerpts From the Proceedings of the Forty-first Annual Meeting of the Iowa State Dairy Association.

ADDRESS OF WELCOME BY THE MAYOR.

Ladies and Gentlemen: It is rather an unusual experience when the same man has the same privilege of delivering the same address to the same fellows at the same time of the year, for two years, but that is the privilege I have today. I, personally, am glad of it. I don't think you will be so glad after I get through because my personal experience has been—at least I claim it's my personal experience—that I have only about one speech on any one subject and must admit at this time that it is a rather difficult task to give you a brand new speech.

However, you gentlemen are here and the people of Waterloo are glad you are here. We are glad you are here. We are glad that you have been coming into this community for all these years and we hope the time will never come when you will change your place of meeting. If you do continue to come here, I'll promise you this: that if I am still mayor, once each year I will find time to come out here and give you the same address of welcome.

We realize that every patriotic citizen of Waterloo takes great pride in this annual Dairy Show; at least they tell us that a Waterloo man is always talking about his town. It has come to be that in this city this is our big show. It's the one entertainment which attracts the manufacturer, business man, merchant, laboring man and every person around Waterloo, and we recognize that it is to this association we owe the things we are having here at this time.

I suppose you know that the first Dairy Show in Waterloo was put on by this association. The reason for this was that the association was holding its annual meeting here. The people of Waterloo have developed it year after year until it has reached its present proportion, and underlying it all is the fact that it is your organization which it is representing.

Now we have in the city of Waterloo a community of people who are not so different from the average community in every section. We are people who are interested mainly in successful agriculture in our country. We take particular pride in our relationship to agriculture. The manufacturing industries of Waterloo make machinery that is used almost entirely by farmers. The most substantial institution in the world is that of agriculture and we are a people who take pride in our close connection with it.

We have two sides of the river and if some of you have not already had the experience of telling which side of the river you like best, on the wrong side, I wish you would tell me. We are a people loyal to the state and to the country at large. We like to boast of ourselves in a way that is not objectionable. We believe in loyalty. We believe that if you are not satisfied with your business or the place in which you live, in justice to yourself you should change.

Into this community of homes, of manufacturing industries which relate to the agricultural industries and which represent the garden spot of the world—into this community which is recognized as being of great value to the dairy industry and which is making dairying better for the farmer each year, I welcome you all.

It is a distinct pleasure to stand here this afternoon and tell you that you are welcome and I do it with confidence, because I know the people of Waterloo. If there is anything the city can give you, let me know and I will see that you are taken care of. I haven't the slightest idea that such will be the case, but if you are molested by those distinguished looking gentlemen on the street with blue coats, stars, helmets, and clubs, refer the matter to me. I say I do not believe you will be molested, but if you should and will advise me, I shall be very glad, in my dual capacity as mayor and attorney at law, to see that you are legally convicted and it will not cost you a cent to have it done. Again, gentlemen, I welcome you.

Mr. Stephenson: Is Mr. Cole present? Mr. Cole was on for the response. Inasmuch as he is not here, it gives me pleasure at this time to introduce to you, Mr. Van Pelt.

THE FUTURE OF DAIRYING.

By Hugh G. Van Pelt.

Ladies and Gentlemen: I really became very envious of Mr. Law when he started to talk to you and said he had only one speech; I thought how fortunate I would be if, like him, I had one speech. I have been very unfortunate in that respect. On one occasion I was going to make a speech and I decided I would write it out and read it, so I took a great deal of time to prepare it. Just before I got to the meeting I lost it. The next time I wrote it out and committed it to memory and when I got on my feet, I forgot it; so ever since that time I have been compelled to say what was on my mind.

I am here today without a speech. Like the preacher who went before his congregation, "I have been so busy this week I have not had time to prepare a sermon. I hardly know what I am going to say. I'll have to depend on the Lord this time, but next Sunday I promise you I'll come better prepared." So some time I hope to come before you better prepared.

I remember some years ago when the State Dairy Association held its meeting on these grounds, we had a tent some five times as large as this and the seats could not hold those in attendance. I really believe that this convention should mean more to the dairymen and buttermakers of Iowa than it seemingly does. It seems to me that at this particular time, in this particular period we are going through, this tent should be full. I realize there is much going on in the grounds and I realize it is difficult to listen to dry speeches when cattle are showing, etc. Nevertheless I believe that the program which has been prepared should be sufficient so that at this time, as in past years, you should fill up this tent and get the good out of the program.

I believe that the State Dairy Association has performed a remarkable mission for the Mississippi Valley and the United States. It was the State Dairy Association that founded the Dairy Cattle Congress. In 1906, the first time I appeared before this meeting, there was a large attendance but there were only two bona fide dairymen present as I found when I analyzed the crowd afterward. W. B. Barney was there and because he is not here today, I am sure the reason he was there then was because he was president of the association. The only other dairyman present was a breeder of Red Polled cattle from Central City, Iowa. The rest of the audience was made up of buttermakers, railroad men and commercial travelers, so that the State Dairy Association at that time had but two real cow men present.

When I went back home I threatened to go back east where men who milk cows attend meetings. Instead, however, I prevailed upon the association officers to permit me to put on a cow demonstration the following year. The Holstein-Friesian Association paid the expenses of bringing some of Mr. Barney's cattle from Hampton and the American Jersey Cattle Club paid the expenses of a choice consignment of Jerseys from northwestern Missouri.

The event was advertised well and men who milked cows came by the score to learn the essential points to be observed in selecting, breeding and feeding real dairy cattle. So successful was the plan that the next year a regular dairy show was staged in connection with the Iowa State Dairymen's convention and the great show you are attending now is that infant growing and developing in its start toward maturity. I can say without fear of contradiction, that this show is one of the two largest and most important dairy shows of the world and the Iowa State Dairy Association founded it.

I am certainly glad to speak to you who are present today, because I am sure that there are many messages which you can and should take home with you. Today the dairy sections of the world are in a critical condition, but not more so than other interests dependent upon livestock. At this time there is being held in Waterloo a meeting for the purpose of encouraging the Iowa farmer to raise more hogs. There are only 80 per cent as many hogs in Iowa this year, in spite of high prices, as is our normal crop.

We are feeding less beef cattle also, and just what is to beoome of the meat supply of this world, when the state of Iowa, where more meat is fed for market than in any other state, fails us as it has during the last few years, is hard to tell.

The allies are crying for fat. Von Hindenberg cried for fat months ago. This war will be decided by the supply of fat. It will be the side which can supply this fat that will eventually win. There are two great fat-producing animals—the hog and the cow. Of all animals the dairy cow is the most economical; she is the largest producer of fat, not from corn only, but from corn and feeds fed in conjunction with it.

Mr. Hoover recently made the statement that the allies would begin to purchase fat from this country just as they now do the wheat, that is, the fat will be purchased through the hands of one man.

Today in the state of Iowa it is being proposed to the farmers that the price of pork be fixed by way of tying it to corn. The packers have been licensed and they will be asked to pay for one hundred pounds of pork the value of a certain number of bushels of corn. All other animals will then be placed in competition with the hog because corn will be based upon the price of hogs. We know absolutely that the cow is the most economical producer of fat for mankind, but when we make that statement we must realize that there are cows and cows, and to compete with a steer, a cow must be a good cow. More than ever before, it is going to be necessary to make the dairy industry of this country profitable by encouraging the milking of good cows. I wish to send this message home with those of you who milk cows, those who handle the product from cows, and also those of you who deal directly or indirectly with the man who handles cows. Disseminate it as broadcast as you can because it is the most important message that can be spoken at this time. We know there has been a tremendous slaughter of dairy cattle this year. In the state of New York alone there are 75,000 less yearling heifers today than is their normal crop and in other states the loss of young animals is comparatively as great.

The cheapest beef in New York city today is six-weeks'-old-beef. In the face of this we cannot expect men to raise calves that are not going to be profitably productive when they reach cowhood. So you see that the high price for beef, for veal and for feeds is working adversely to the dairy interests. We are entering a period when the buttermaker will have a hard time to get a sufficient amount of butterfat; we are approaching the time when the farmer is going to begin wasting the fertility of his farm. We will then, as they were twenty years ago, be on a one-crop basis and I fear that in a country like ours it would be very detrimental to get back on that basis, because, remember this: it takes some time to encourage a man to begin milking cows and when he does begin it takes three years for him to breed, raise and develop a good cow.

Patriotism is good while it lasts and I know that there are some who will milk cows at a loss for some time. We know that a soldier is patriotic in the trench until the blood is drawn from his body. It is the same with the farmer. He will be patriotic until his finances are drawn from his possession. In conducting the dairy farm today we are paying the highest price for food stuffs, labor and supplies that we have ever paid, and I regret to admit it to you today that it is only the good cow, cared for by the good caretaker and fed as she should be that is making money. I believe that every patriotic man connected with the dairy industry today should realize that the basis of the dairy industry and of agriculture and the basis of civilization and progress is the cow. And when it is just as easy and cheap to raise a good cow, as cheap and easy to milk a good cow, as it is to raise and feed a poor cow, I believe that we should speed up our efforts to improve the cattle of the country. The educational propaganda that was put on in Iowa a few years ago has done much toward eliminating the poor cow from our herds. We should breed up our cattle so that even as we need them, we will have them. And at this point I would say; when the agriculture of any country reaches a point where it is impossible to make a profit from the dairy cow, then there is no way possible to make money from any branch of farming and agriculture has started to decline.

We have a real problem before us at the present time. Upon the way we conduct the dairy industry at this time depends very largely the character of the dairying and therefore the agriculture we are going to have in the future, and it is going to test our patriotism.

Our world is short of fat at the present time. In Europe they have slaughtered up to date more than one hundred million producing animals and of these at least one-third have been cows. When the embargo was placed upon the exportation of food stuffs, Holland ordered one-half million cows slaughtered with one-half million to be slaughtered later on. France is in the market for one million cows when the war is over. Only in American can cows be secured and if we slaughter our cows, we will not be able to supply the demand.

There is no better business proposition we can go into on the farm today than that of raising dairy cattle providing we raise good ones. People will not export poor cattle and let me tell you that when this war is over, our country will be stripped of every good cow we possess unless we fill the stalls with good cows now. I believe this so thoroly that altho we started with a little herd we are making arrangements to have just as many good cattle, sired by good sires and from good dams as we can possibly own when this war is over.

There never was a poorer demand for poor cattle than there is today and in all of my experience of a score of years there has never been such a good demand for good cattle at high prices as there is now and this demand will not cease until the European nations are restocked as they were before the war. And furthermore, I thought I knew the importance of the dairy cow but I have just come to the realization of her real worth. I knew that if she was properly cared for she was a cash producing animal that made communities prosperous. But there was something about the dairy cow I did not know. Since the war began in Europe we have been reading of the terrible slaughter that has been going on in the trenches and we are appalled. We are now becoming so accustomed to it that we read thoughtlessly, but when we sit down in our calmer moments and think what it really means, it seems beyond comprehension.

The slaughter in the trenches is not large however as compared with the slaughter in the homes of Europe today. If you have looked over your papers you will notice that the infant mortality of all nations engaged in the war has ranged from 40 to 98 per cent—in other words, 40 to 98 per cent of the infants born during the past three years have died. England has been buying our condensed milk and our butter and her mortality is only 40 per cent. In France it is 58 per cent. In Servia they have no cows, and generally speaking there are no children in that nation under three years of age. That's what the dairy industry means.

If, at this time, we permit our good cows to go to slaughter, then I say to you that we are not far away from the time when we are going to increase very largely our infant mortality. But about this time we begin to learn something of the value of butterfat. Experiments carried on by certain investigators, particularly McCollum, show that butter fat possesses a certain unknown soluble which is essential to the maintenance of the human being. In countries which have few dairy cows and where little or no milk, or the few other foods which contain this substance are fed, the effect is plainly shown by the stunted appearance of the people. India and parts of China are examples. In Denmark when they first put in the cream separator and the farmer wished to sell largely of his butterfat, they began to live on skim milk. Then disease attacked the people in the rural communities. When whole milk was again placed in the diet normal conditions were restored.

Personally, from the standpoint of patriotism, I believe that every man on a farm in the state of Iowa should begin building up the livestock of his farm. The man who milks cows cannot do a more patriotic thing than to head his herd with a good sire and build up the productive powers of his herd, knowing that in one generation it is possible to build up the herd production one hundred pounds or more.

Every creameryman and every buttermaker should encourage his patrons to do this. The owner of a creamery should make it his business to secure in some way or other, wherever they are procurable, good sires, bring them into his community and sell them to his patrons at cost or on time, if you please, and take the cost price out of the milk checks gradually and build up, by his own efforts, the cattle in his community.

I became acquainted with a man from Texas who wished me to come and see his ranch. He told me what he was trying to do; he didn't say anything about trying to get rich, but his whole conversation centered around what he was going to do with one community of the United States. He had seen a large portion of the United States come into agriculture and become robbed of its fertility. He desired to have a hand in building up instead of wearing out his part of the country. I think his was a great ambition—to bring one section of this great country into agriculture, to begin at the beginning and build it up instead of tearing it down. I was impressed with that man and visited his farm. He had secured 390,000 acres of land in one of the worst sections of the United States which could be found. He went into that section where fifteen or twenty years ago it was said of the land that nothing would grow on it except rattlesnakes and cactus. It was mostly sand land and suffered from great drouths. He began buying dairy cattle.

When I was there on the fifth of November a year ago, I saw them getting twelve tons of feterita per acre. Now that man went there and spent his money to disclose the value of that land before he would sell an acre. When he sold his first, and his tenth, and his fiftieth, and his hundred and fifty-sixth farm, he said to the buyer, "I will sell you this land under one condition, and that is that you take with it some cows because you can't live in this country without cows.'' He took me around and showed me the prosperous farms on that sand land, the men building up homes, men who were prosperous even though they had suffered occasional drouths.

That's what one man with the right idea in his mind has done for his community, and he was surprised to find that because he had done this for his community the value of the land increased from 50c to $35 an acre. He woke one day a millionaire and it came simply by trying to build up a community and help the people in the community—and I commend this thought to the buttermaker.

That man went into a country where there was nothing but the long-horned Mexican steer. He bought dairy cows and put them where men said they couldn't live. I saw the report of his creamery yesterday, for the 27th of September. In that little creamery he made on that date 1,781 pounds of butter and last year from that creamery the output sold for the second highest price of any creamery in the United States. His ambition, and it looks as if he is going to be successful, is that this year he will pay his patrons the highest price for butterfat of any creamery in the United States. This is being done in the land "where only rattlesnakes and cactus'' grew twenty years ago.

The entire world is being denuded of live stock, especially dairy cows. Three years are required to grow a producing cow, and if we are going to have cattle three years hence (when I promise you that the demand will be world-wide), you must remember that those whose cattle will be good then are the ones who are building up their herds today.

I wish to thank you kindly for the attention you have given me and I wish you all success.

Mr. Stephenson: There is a matter I wish to bring before the convention at this time and that is this: Possibly you men are aware of the fact that, in order for the Iowa State Dairy Association to get the appropriation that is set aside for it by the state, we must have five hundred bona fide members. There have been sent out from Mr. Estel's office this year about sixteen hundred letters. Mr. Barney also sent out about sixteen hundred. I sent out nearly the same from my home to the dairymen of the state, and in response to that effort, we have something like 250 who have taken out membership and nearly all of these are dairymen.

I think that we have received at my home something like between 220 and 230 memberships. These are for the most part from dairymen who feel thta it is to their interest to build the membership of the Iowa State Dairy Association up to the number required to receive the appropriation that has been given us by the state. You know Mr. Estel and his assistant are paid from that fund, and you men are nearly all in close touch with the work that has been done and it has been mighty effective, especially in the southern part of the state and we cannot afford to allow our membership to dwindle.

We have something over 464 creameries in the state of Iowa. There are eighty-four tubs of butter exhibited here this year and that means eighty-four buttermakers out of the 464 who are entitled to a membership in the Iowa State Dairy Association.

I want to urge upon you the necessity of every butter-maker in the state of Iowa taking out a membership. It costs you a dollar and it is a dollar mighty well spent, and I certainly hope that if there are any buttermakers here who have not a membership before you leave, you will take one, because we certainly need your help.

Mr. Stephenson: We will at this time have the privilege of listening to Mr. Barney, our State Dairy Commissioner.

ADDRESS BY MR. BARNEY.

Now I am not going to keep you a great while. I believe I am the man who said that I thought that people would rather look at a cattle show than to hear long-winded addresses by Mr. Van Pelt and myself and I think I have good evidence here this afternoon that I was right when I made that remark.

I am going to tell you something of the plans for the winter campaign in southern Iowa. It has seemed to me that we should develop southern Iowa better than in the past few years, but for some reason or other no one seems able to get up interest enough to get action such as we should have in a country that is as well-suited to dairying as that is.

Upon the invitation of the ex-treasurer of the state, Mr. William Morris, I have attended three meetings at Afton. We had rather small crowds. However we have a plan which we believe is a good one. Now this idea isn't my own, but the ex-treasurer's. He said: "Now Mr. Barney, if you will come down again, I think I have a plan that will get out a bunch of people who will be interested in the dairy development of southern Iowa," and this was the plan: He went to every member of the Commercial club and asked them to fix an evening when we could invite me down and they would have a little lunch at the hotel. Each member of the Commercial club was to invite in two or three farmers. They made the arrangement and of course the merchants of that town were glad to take advantage of the opportunity to do the nice thing and each of them invited about two or three of the influential farmers in that neighborhood, as it was to the interest of the merchants as well as to the dairy industry. We had about 150 at that meeting and I don't know that I ever talked to a crowd which was more interested than that one was, and I really think that we got something started there that will mean something, and the department is going to take up that work this winter and we are going to go into southern Iowa and ask the Commercial Clubs to co-operate with us, and we are going to ask the Association to furnish men to help us. The De Laval Separator Company will furnish a man—Mr. D. L. Harcourt. Now, as a general thing, the department tries to fight shy of co-operation with commercial companies of that kind, but after an experience of about three or four years with these people and knowing the work they are doing, I want to say frankly that we would be glad to have their man help us and I would be glad to arrange with any other institutions of that kind.

I believe most of you know that southern Iowa is just about as well-adapted to dairying as the northern part of the state. We are going to have Mr. Lambert take charge of that work and have him pay almost his entire attention to it this winter, and it is our hope that where we find it is impossible to organize creameries, to build up the dairy industry by organizing cheese factories. There are eight or ten cheese factories in the northern part of the state that are wonderfully successful and are very profitable, and we are going to encourage that sort of work where we find that there isn't sufficient milk to organize a creamery. Now I think that is a plan that will result in considerable good down there.

The dairy train has done wonderful work in Iowa, but we can't expect very great results from the use of the dairy train from now on. Now briefly that is the most important thing the department has in mind for the winter and I desire the co-operation of all the people in Iowa who are interested in dairy work.

Now this question of conserving the cow. When you take into consideration that the milk of one cow is equal in food value to three 1,500-pound steers, isn't it worth while that you should look at it from the angle of economy? If a cow will produce the food value of the beef of three steers, isn't it much better to conserve the cow? Because after she has produced that milk during the year, you still have the cow to go on and do the same thing over again. When you have killed the steers you have nothing left.

Now there's another consideration that we should keep in mind —that six or eight pounds of corn, or any other product of that kind, will produce a pound of butterfat. Butterfat is worth around forty cents at this time, and that same feed fed to a steer would produce only a pound of beef. The average price of beef now as it comes to market is somewhere around ten cents a pound. That is its usual price. That leaves you a difference of about thirty cents for your work, and it seems to me that it is well worth while to do that work for the thirty cents that you get. Then when you have sold that steer what have you left to produce another calf? Nothing.

I have every confidence in the dairy game at this time. I know that a good many are getting weak-kneed and are selling their cows. I do know this: That dairy cattle are going to be worth more money in the next two, three or four years, than they have ever been before. I think that if we are going to do away with any of our cows, it should only be the star boarders. Be sure before you sell them that you are getting rid of the worthless ones.

If there's anything I pretend to know a little something about it is a cow. If a fellow could fool me on a cow, he would be welcome to what he got out of me for it. "A thing of beauty is a joy forever" doesn't apply to a cow, for I don't think that a man could go into my herd or any other herd and pick out a good cow without using the Babcock test and scales, although I know there are certain general characteristics about all good cows and that in a measure you can tell some of the good ones from the poor ones.

I have a farm up north here and I go up occasionally and tell them what I think about things and what I think such and such a cow would do. I remember a year ago last winter we were putting on some tests. We had the cows lined up there in the stanchions. One made an official record of a little over thirty pounds of butter in seven days. "Well boys," I said, "if that cow can make thirty pounds in seven days, there are four or five others that should make thirty-five pounds of butter." This only goes to prove how easily a fellow can be fooled. They didn't find another one that winter that could come up to this one and I didn't know as much as I thought I did.

You may have noticed that some of the breed papers have been carrying articles regarding show ring type versus production. Judging in the show ring is a good thing, but I want to warn you not to depend on what you think you know but find out what you want to know by the use of the Babcock test and scales.

Now we have a few men here who are interested in creameries and I want to tell them that I am not at all satisfied with the way we are getting on with this trade mark proposition for butter in Iowa; we are not getting enough out of this proposition. I think I can explain one of the reasons why there has not been a greater interest taken in it. The time the trade mark was adopted, (and I think it is the best trade mark of any state; several of the eastern states have made inquiries regarding it), was not opportune. Dairy farmers could get more from ice cream factories for the same cream which was necessary to produce butter to meet the requirements of the state brand. Creameries began to get a lot more for their butter and the ice cream people began to enlarge their business. I got sixty cents a pound for butterfat and I felt that I could hardly patronize a creamery when I could get that price. Now I know from my personal experience that it doesn't take much trouble to produce cream which will sell for top price. We haven't an ice house on our farm but we have a well which contains very cold water, and an aerator which is cooled by water from this well. I was up there one Sunday and went out and watched the cream as it passed from that aerator. I took a quart of the milk with me to Des Moines and after I got there I put it in cold water and was able to keep it sweet for five days simply because the separator had been washed every time it had been used.

It is just as important to wash our separator after every milking as it is to wash our dishes after every meal; if we didn't wash our dishes what would company think? It is a good habit to get into and after it becomes a habit we will no longer find it an unpleasant task.

Now there is no question but what you know, gentlemen, that we should increase our products here in Iowa during the next ten years, so that we will be turning out double what we are now and the thing to do is to take better care of the stock we have now. It is a time when we must all give our best efforts to the nation; it falls to our lot to see that our country and our allies are provided with sufficient food and I feel sure that Iowa and Iowa farmers will respond nobly.

THURSDAY MORNING SESSION.

Mr. Stephenson: The first number on the program this morning will be an address by Professor Sammis of Madison, Wisconsin, on "A Comparison of Advantages of the Cheese Factory and Creamery to the Farmer."

ADDRESS BY PROF. SAMMIS.

The farmers of Iowa have in past years marketed their milk mainly through creameries, and have had little or no experience in the production of cheese. In Wisconsin, we have over 2,500 cheese factories, as well as about 900 creameries. Besides the well-known American cheese, made in fifty-seven counties, there are about twenty other varieties of cheese made in Wisconsin, of which the most important are the Swiss, brick and Limburger.

In comparing the creamery and the different kinds of cheese factories as means for marketing milk, many points of interest are met with. The advantages are not all on one side. Under some conditions, a cheese factory is preferable, and in some localities a creamery is to be preferred by the farmer. After the choice has been made, and the creamery or factory is once established in a community, it usually pays best to continue one line of manufacture, and not to change back and forth frequently from cheese making to butter making. During part of the year, butter prices may be higher, and in summer time cheese prices may be higher, but in the long run, the cheese factory value of milk averages just about the same as the value at the creamery, including the by-products in each case.

I would not advise you to equip a small, new factory for making butter in winter and cheese in summer, under ordinary circumstances, for several reasons. First, there is the extra cost of buying the double equipment. Also, more floor space or storage room must be provided to hold the equipment. The unused part is likely to be damaged through neglect.

Second, your butter makers are not usually able to make cheese also, and it is difficult to hire either a good butter maker or a good cheese maker for part of the year only.

Third, having found a good market and buyer for your butter, it is necessary to look for a satisfactory cheese buyer, when the cheese is made. It is well known that buyers will give more consideration to factories running the year around than to those that run only for part of the year. Thus, in several ways there is disadvantage in changing a factory from cheese to butter and back again. Therefore having made a choice, it is generally best to stick to it.

In a new dairy territory, where the number of cows and the available milk supply is limited, the cheese factory offers certain advantages. A cheese maker can keep very busy handling 5,000 pounds of milk, and a cheese factory can be started and run for a time with only 200 cows or 2,500 pounds of milk, if there is good prospect of an increased supply. But in general about twice as many cows and twice as much milk are required to successfully run a creamery. This great advantage is in favor of the cheese factory in newly settled regions.

The ice supply and refrigerator which every creamery should have is not required at a cheese factory, although a few factories have ice houses, when convenient. If necessary, it is possible to start a cheese factory with self-heating vats, and without any boiler or engine, thus reducing the first cost of equipment. However, the advantages of steam heat and power at a cheese factory are now generally recognized. With steam, it is easily possible to steam all utensils, to have plenty of hot water for washing and scrubbing, to pasteurize milk for making starter. Nearly all cheese factories now have whey separators, run by steam turbine or with a belt from the engine. The skimming of whey and sale of whey cream has often paid $1,000 extra income to the farmers in a year, and every cheese factory should skim the whey. Not needing ice, a cheese factory can often be established in a locality where ice is not easily obtained, and a creamery would be unsatisfactory.

In territory where there is an abundance of milk and cows, the choice between the creamery and the cheese factory depends largely upon the kind of cows kept. If the production and sale of pure bred stock is the main feature of your farm business, then practically every calf is worth raising, and in such cases an abundant supply of skim milk is required, and the local creamery is the preferable market for your cream.

On the other hand, at many dairy farms where low grade or scrub cattle are now kept, several years must be spent in cow testing, selecting and breeding up the herd, before the calves will be worth more than their value as veal. Only a few calves are raised each year, to keep the herd up to its proper size. The whole milk is therefore preferably delivered at the cheese factory and whey is hauled back and fed to hogs on the farm.

Besides maintaining and enlarging the dairy herds, the main purpose on the dairy farm is the production of milk for human food, in the largest quantities possible, without injury to the fertility of the soil. Under the emergency conditions attending the present war, it may be necessary in some cases to disregard the loss of fertility and to sell more whole milk from the farm to the condensary, returning no by-products to the soil.

But under ordinary peace conditions, the demand for condensed milk is far less, and in choosing between the cheese factory and the creamery, the source of milk fat, milk casein, etc., should be considered. Fat consists of carbon, hydrogen and oxygen, while casein consists of these elements together with nitrogen. All four of these, carbon, hydrogen, oxygen and nitrogen are taken from the air during plant growth, and later converted into milk by the dairy cow. Since nitrogen is readily added to the soil by growing alfalfa, clovers, beans, or other legumes, there can be no objection to the sale of casein in milk at the cheese factory. The advantage of supplying nitrogenous food for man in one form of casein and cheese offsets the disadvantage of selling part of the mineral matter of milk which enters the cheese.

Arguments against the cheese factory heretofore have been based mainly on objections made to the sale of casein, and these objections are seen to have little weight, where legumes are raised abundantly on the farm.

Recognizing that the supply of nitrogen in the soil can be maintained by use of legumes without feeding skim milk or casein to farm animals, the two important mineral fertilizers potash and phosphorus remain to be considered. Nearly all of the potash in milk is present in either the skim milk or in the whey, so that with respect to potash, the cheese factory and the creamery alike return most of the potash to the soil.

About half of the phosphorus in milk may remain in cheese, so that skim milk contains nearly twice as much phosphorus as does whey. However, a ton of cheese robs the soil of only seven or eight pounds of phosphorus, worth formerly about 4 cents a pound.

All over Wisconsin, thousands of hogs are being raised and fattened on cheese factory whey, fed along with a little grain. Creamery patrons accustomed to feeding skim milk to farm animals sometimes think of whey as consisting almost entirely of water, and having little or no feeding value. One hundred pounds of whey properly fed to hogs will produce as much gain in weight as will one-fourth of a bushel of corn. With corn at $2 a bushel, the whey is worth 50 cents per 100 pounds for hog feeding.

One hundred pounds of whey from American cheese contains about one-fourth of a pound of butterfat which can be recovered as whey cream, by means of a whey separator. At present, practically all cheese factories run the whey through a separator as it comes from the cheese vat. The skimmed whey is run into the whey tank to be hauled back by the farmers, and the whey cream is sold. The one-fourth pound of whey fat sells readily for 10 or 12 cents, and is used in making butter or ice cream. One hundred pounds of whey contains about 7 per cent of solids, and the removal of the whey fat takes out only about one-twentieth of the solids, or one-tenth of the feeding value.

Moreover, by adding one pound of grain costing about 2 cents to 100 pounds of skimmed whey, the farmer restores it to its original feeding value, making a gain of 8 cents. After paying the expense of running the separator, the patrons at a moderate-sized cheese factory may receive about $1,000 a year from the sale of whey cream.

Creamery patrons accustomed to the use of the hand separator, and to the feeding of skim milk at home to hogs and calves, sometimes think of cheese factory whey as a dangerous feed, likely to bring in tuberculosis or other diseases from one farm to another, through the factory whey tank. Danger from this source has existed in the past, but is now avoided through the pasteurization of whey at the factory. For this purpose, the cheese maker runs steam into the whey in the tank, heating it up to 155 or 165 degrees, and after standing hot for an hour or more, the disease germs are entirely killed, if any were present. Minnesota has long had such a law requiring pasteurization of creamery and cheese factory by-products before they are hauled away to feed to livestock, and a similar law was recently passed in Wisconsin.

Factory patrons prefer the pasteurized whey after they have tried it, as it is warm and sweet and is better feed than the cold sour whey which they would receive if it were not pasteurized. In this way, cheese factory whey becomes a warm, sweet and satisfactory feed for hogs.

Some of the advantages in making American cheese, sometimes called cheddar cheese or ordinary cheese, are that it can be sold soon after it is made as it is usually shipped from the factory to the buyer when three days to one week old. Also there is no difficulty in finding a buyer for this kind of cheese, as practically all grocers handle it. American cheese can also be put in cold storage and kept six months or more, if market conditions require.

As there are already several thousand factories in operation in the United States making this kind of cheese, it is not so difficult to find a maker when starting a new factory. The Wisconsin Dairy School has about 160 students in its three-months course every winter, and turns out a large class of cheese makers each year.

When beginning to make either brick, Swiss or Limberger cheese, it should be remembered that these cheese require to be kept in the curing rooms at the cheese factory for some time, several weeks or months, before they are ready to be sold or shipped. Also the number of dealers handling these varieties of cheese is smaller, and it is well to locate a market for these products before beginning to make them. The Swiss cheese which requires several months to cure also sells at a higher price, if of good quality. It is necessary however that patrons at a Swiss cheese factory shall haul the milk to the factory both morning and night, while it is fresh and warm, while milk for making American cheese is cooled and kept over night at the farms, and hauled to the factory only once a day in the morning.

Before attempting to make any of the less common varieties of cheese, such as Edam, Neufchatel, Camembert, Roquefort, or even the well-known cottage cheese, it is absolutely necessary first to locate the market in which they are to be sold, as only a few dealers handle them. Some of these cheese varieties as Neufchatel and cottage cheese must be sold and eaten within two weeks after they are made, and while they are not all difficult to make, it is sometimes hard to market them promptly, before they have spoiled.

A skilled and experienced cheese maker should be hired, enough milk provided to keep him busy, and a market found before beginning manufacture.

If the farmers who patronize a factory will co-operate in the building and ownership of the plant, and also pay close attention to its business management, to see that the cheese is properly made, sold and paid for, and if they will each take care of the milk properly at the farm, so that it reaches the factory in good condition, the principal requirements for a successful factory will be attained.

Member: I would like to ask the professor why the factories in Wisconsin send their cheese to a central point to be paraffined instead of paraffining it at the cheese factory?

Prof. Sammis: They do that because that is the most convenient thing to do. It's what the trade demands. The cheese makers might parraffin their cheese and in some instances they have done so, but you get very uneven results in that way. If you are going to make up a carload of cheese to ship, you like to have it uniform, to make it look alike. Now if that cheese was paraffined at a dozen different factories, the jobs would be all different and there would be no uniformity, so the buyer likes to paraffin all the cheese.

Another thing, the cheese is shipped from the factory when it is quite young and it can be paraffined better at the warehouse when it is a little older. Another thing, if you paraffin the cheese at the cheese factory, the paraffin gets cracked in handling, while examining and weighing it.

Member: Would you recommend a cheese factory in hill districts where they have the white onion?

Professor Sammis: We don't especially recommend the white onion as a food for the dairy cow. A few years ago we had a question like this when they began to spread silos around. Some thought they couldn't make cheese out of silage milk. After a few years that objection disappeared, and there isn't a farmer anywhere who doesn't have silos.

Member: How can that be eliminated?

Prof. Sammis: I don't know exactly because we advise that they do not areate the milk and if they can't keep the white onion out, I don't know what we can do with it.

Member: Why do they have trouble with white clover in making cheese when it does not bother in making butter?

Prof. Sammis: It's not the white clover that's causing trouble so much as pond water. We don't recommend pond water. I have heard of a case where a man's well went dry and he had to haul water from a pond to wash the milk cans and they began to have trouble at the cheese factory right away. They used that old reliable curd test, and they haven't had any trouble since. The reason his milk was bad was because he was using pond water to wash his milk cans in. If he had simply poured the whey out and put the milk in the cans without washing them, his milk would have been better. If the cows wander around and get dirty, it is likely to cause gassy cheese. White clover does not give trouble along that line. It's milking with dirty hands, etc., that causes trouble.

Member. Isn't it a prevalent opinion among cheese makers that white clover causes this trouble?

Prof. Sammis: Yes it is.

Member: What is the fat content of cheese?

Prof. Sammis: The ordinary fat content of cheese is about 37 per cent; moisture not over 40 per cent, and New York has a 29 per cent law and I see the standard adopted by a committee of officials uses 39 per cent as the moisture limit. The solids are made up of casein and fat—about one-third casein.

Member: About 10 per cent?

Prof. Sammis: Out of the 63 per cent of solids in the milk, you have about 35 per cent fat and 25 per cent casein. We usually do not refer to the percent of fat in cheese, but to the percent of fat in solids.

Member: Is there any difference in the quality of cheese obtained from the Jersey milk and the Holstein milk?

Prof. Sammis. The cheese market is not able to distinguish between the cheese made from Holstein and Jersey milk, and there is no difference in the price.

Member. What is the comparative yield of cheese from milk of different richness?

Prof. Sammis: The yield of cheese is sometimes said to be 2.7 cheese to a pound of fat. It's like saying we have an "average American." If you take thin milk, you will get more cheese per pound of fat than out of rich milk. You take 4 per cent milk for example and you'll get about 10.6 pounds of cheese containing 37 per cent of moisture. In using 3 per cent milk instead of 10.6 pounds you'll get 8.3 pounds of cheese.

THURSDAY AFTERNOON SESSION.

Mr. Stephenson: The first speaker this afternoon will be Prof. Mortensen, who will speak on the subject of "Standardizing Butter."

ADDRESS BY PROF. MORTENSEN.

The greatest need of the creameries of this state and in fact the entire country today is the need of uniformity. If we were to go to Denmark to a fair, for instance, we would always find a uniform quality of butter. I assisted at several conventions in Denmark three years ago and the flavor of all the butter was practically indistinguishable except to experts. People in general could not detect any difference in the flavor.

We have 450 creameries in this state and we have about that many different brands of butter. Each creamery here is a separate unit; each is working on its own problems and there is no co-operation among the co-operative creameries. We understand that there is co-operation only in this way: That there is co-operation between the patrons or owners of each creamery.

We are getting ready to bring about a closer co-operation among the creameries of the state and in July, I believe it was the 11th, I brought the matter up at one of our board meetings this year at Ames; I called it to the attention of Judge Quarton and Mr. Barney.

We must produce a quality of butter that will be uniform. They have been doing considerable work along this line up in Canada and so it was suggested that I make a trip up there and see something of the methods which were being followed. We find that there they had begun to standardize the product. When the task was first undertaken it was found that they had a good market in England, but it was a question whether they would be able to produce butter that would satisfy the people over there as they are very critical.

What we are trying to do now is much along this same line. I called a meeting and recommended that we do this: That we have a grading station in Des Moines and one in Mason City. Mason City is right in the center of the dairy district of Iowa and Des Moines is also centrally located. Then I recommended that we have an expert in each place to grade the butter. In addition to that we should all get busy in the state of Iowa organizing district associations—say a county or more than a county—get two counties together and have an expert for each three or four hundred pounds of butter that is graded.

If each expert will see that everything in his territory is standardized and will work together with the other experts then we will be able to get all the goods standardized. Then we will try to work for the co-operation of the butter dealers and of the creameries. It is up to the creameries if they want to take advantage of this grading station.

Now you may well say, "Can we afford to spend this money?" because it will cost the state about $10,000 a year. It strikes me that with this state manufacturing, as it does, 100,000,000 pounds of creamery butter a year, it should certainly be able to afford to hire these two men, when Alberta which manufactures but 7,000,000 pounds a year can conduct two stations, one at Calgary and one at Edmonton with three men at each station.

In New Zealand they have nine grading stations and one expert, Mr. Wright, in London, and they manufacture about sixty or seventy million pounds of butter as compared with our one hundred million. We can never afford to stay in our position. We should try also to have a committee from the National Association which would look after the creameries throughout the United States. I feel that the department at Washington will be willing to help. It will possibly take a great many men and involve the expenditure of a great deal of money in order to have these products standardized in the way which we have outlined. This is a step which favors all and it is the duty of every creamery to co-operate in this matter.

After they began to grade the butter in Canada, they sent a shipment to England and it was pronounced equal in quality to the butter there. The excuse that some men in this state may be tempted to offer, that the climatic conditions vary widely in Canada and Iowa, will hardly hold, for if any disadvantage exists, considering the fact that in Canada the temperature frequently falls in the winter to as low as sixty dgerees, while in Iowa it seldom drops below twenty, it is Canada and not Iowa which suffers.

I think it is up to every creamery man to consider this proposition and to decide for himself and I hope as many creameries as possible will take a step in that direction of producing uniform quality once we are ready to work it up.

Mr. Stephenson: I take pleasure in introducing to you at this time Mr. Kraege of Wisconsin.

Ladies and Gentlemen: I am pleased indeed to extend to you the greetings and the good will of the dairymen of Wisconsin. In Wisconsin we have a keen interest in the work that is being done in the state of Iowa by your State Dairy Commission. We have learned to have a very high opinion of that great educational institution which you have at Ames and we have a great deal of respect for the state of Iowa as an agricultural state and once in a while some of us from Wisconsin come over into Iowa, and I have at this time, for the purpose of listening and learning rather than that of imparting.

I wonder, however, if you realize the greatness of the opportunity that is yours. Daily we are told that this great and terrible war is to be one more of bread and butter rather than of the bayonet and bullet.

We are beginning to realize that the nations in Europe at war are getting closer and closer to the point of starvation. The rations of the men at the front are being reduced from time to time and also the ration of those at home. Within the past six weeks the King of England has urged the people of England to reduce their rations at home 25 per cent. Twenty-eight million cattle have already been slaughtered in the nations over there for meat purposes. Only three weeks ago, the government of Holland ordered the slaughter of 500,000 cattle for meat purposes—Holland, the nation of the Holstein cow is forced to slaughter 500,000 cattle and this isn't going to be the end of it and that means to the people of America that whereas we formerly imported our dairy cattle from these nations we must now export.

We will now have to provide foodstuffs for our allies, as well as cattle to give those nations a chance to start over again.

The people of the United States have an opportunity here such as has never come to them before—the opportunity to become the leaders in animal husbandry. We must be more economical in the use of food. The government tells us that we are wasting seven hundred million dollars worth of food stuffs annually. Mr. Houston says this would provide the French armies at the front.

Preach the doctrine of economy all over the world, but don't ask the women to be more economical in their dresses, because they are now too economical at both ends.

To the corn-growing sections and the wheat-growing sections the appeal of the nation today is ''Raise wheat as never before,'' and by so doing, you will help contribute the largest amount of food stuffs to the country; the appeal of the nation now is, ''Raise corn as never before'' and those likewise will be contributing to the nation's supply.

The same thing is true in the dairy business—extend it. You are extremely fortunate here in Iowa because of the natural opportunities you have for growing corn and crops of all kinds. There is no state in the Union that averages better than Iowa does in this respect, but I fear that a great many of the citizens of Iowa do not fully appreciate this. There is no state in the Union that has better natural opportunities than the state of Iowa. You already rank among the leading states in the Union in dairying, and we in Wisconsin do not envy you—we would be glad to help you. We would be glad to hear that there was another state that could excel us in this matter of dairying. Dairy products are needed at home and abroad just as truly as our corn crops.

In 1916, eighteen million dollars worth of condensed milk was exported to the allies. The exportation of other dairy products is increasing in about the same ratio. Last month twenty-one million pounds were shipped from the port of New York alone.

It is the dairy cow that builds up the bank account big and strong; it is the dairy cow that supplies butter for our board; it's the dairy cow that supplies the clothes for the boys; it's the dairy cow that always leads. When winter comes, does she jump the job? No! She pays for her keep every day that she eats and is never classed among the farmer's deadbeats. Then, friends, let us take good care of the dairy cow.

REPORT OF RESOLUTIONS COMMITTEE.

The Forty-first Annual Meeting of the Iowa State Dairy Association convenes under most inspiring circumstances, State and National.

The war into which Germany plunged Europe three years ago has gradually involved the nations of the Western Continent and our people are witnessing the far-reaching preparations for American participation.

The withdrawal of millions of Europeans from the field of production to protect life, home and honor from the inhumanities of the Hun has caused demands for our products which have advanced prices to points never before reached. The continuation of the war inevitably means the continuation of abnormal demand and prices. For a decade after its close the responsibility of the dairyman to furnish the world its foundation herds of dairy cattle will maintain prices at a high level and we consider it the duty of every American to exert every effort in order to meet this demand with herds which will honor the breed and the breeder.

It would seem no appeal for co-operation would be necessary; patriotism and selfish interest are here interlocked; those indifferent to their duties to family and regardless of their obligations of citizenship are ever at the front in the sordid chase for money; that they are alive to the opportunity of being demonstrated daily.

To the patriot the opportunity to give the best he has to support those who engaged in other service are tendering life if need be to protect the integrity of the nation, the honor of the flag and the security of the home is welcome.

We pledge our support to all who, regardless of race, creed or nationality are allied in the effort to make this world a fit and decent place in which to live.

PART VII

Proceedings of the Fourteenth Annual Meeting of the Corn Belt Meat Producers' Association Held in Des Moines December 11-12, 1917

ADDRESS OF PRESIDENT SYKES.

The past year has been one of unprecedented activity on the part of your association. It will be remembered that at the time of our last annual meeting the Iowa legislature was in session, and during the period that followed the meeting, we made a vigorous effort to secure the passage of a number of important measures affecting your interests. Among them was a bill requiring the railroads to attach a bunk car or sleeper to all trains carrying ten or more stockmen; the Torrens land title bill; the stock yards bill, and others. After considerable opposition on the part of the railroads, and much unnecessary delay by the house committee on railroads, to whom the bill had been referred, we succeeded in getting the bunk car bill before the house for consideration, and it was passed by an almost unanimous vote. But I am sorry to say that it fared very differently in the senate. There the railroads did a very smooth, diplomatic job, by having the bill called up in the senate committee when its friends were mostly absent; and, without giving the association any opportunity to be heard, a vote was taken and the bill killed by indefinite postponement, thus ending its consideration in the thirty-seventh general assembly.

The stock yards bill required the railroads to furnish adequate facilities for yarding, loading and watering live stock at local shipping points, and provided that upon the complaint of five or more shippers, filed with the State Railroad Commission, averring the inadequacy of their local yards to accommodate the shippers, it is the duty of said Railroad Commission to visit the yards complained of and make investigation, and order in on their own motion all needed improvements or repairs. I am pleased to report to you that after much unnecessary delay and sparring back and forth, this bill was passed by both houses and signed by the governor, and is now in force. So the members will please take notice, and, if the facilities at your local stock yards are not sufficient to accommodate the shippers, write the officers of this association and they will advise you how to proceed to obtain relief.

In regard to the Torrens land title bill, the members of the legislature were so divided as to the sort of measure that should be passed that it was impossible to secure any concentrated effort on any one bill. Perhaps a dozen or more bills along the same line were introduced, and every fellow thought his own the best, and none seemed to be quite sure just what was needed. The declaration of war by this country also made it very difficult to secure the consideration of outside measures, as all minds were deeply concerned about that momentous question, and other matters were looked upon as merely side issues.

Now, we should not get discouraged and lose heart, but should profit by past experience and prepare to make a more determined effort than ever to secure the passage of such measures as you may deem wise to have presented to the next general assembly.

The past ten months have witnessed the greatest activity on the part of the railroads to secure rate advances. We are astounded at the way in which they have tenaciously and almost doggedly pestered and nagged (if you will permit me to use that expression) the Interstate Commerce Commission and the state railway commissions on this subject. I am glad to inform you that so far these increases, as applied to farm products and live stock, have been defeated.

The ink had hardly dried on the decision handed down by the supreme court of the United States, declaring constitutional the Adamson eight-hour law, which gave the train men ten hours' pay for eight hours' work, when the railroad presidents and general managers from the east, west, north and south, were down in Washington soliciting and imploring the Interstate Commerce Commission for a horizontal increase of 15 per cent in freight rates on all roads, to go into effect on May 1st, without suspension or investigation. If this increase in rates had been granted, it would have increased the freight bill of Iowa shippers some six million dollars or more annually, and would have placed an additional burden upon the citizens of this nation of some three hundred million dollars annually—quite a snug little sum indeed.

The situation grew steadily more alarming, as the presidents and managers continued to visit Washington and importune the commission for the advances. Finally a mass meeting composed of the officers and representatives of the different organizations and individual shippers was held in Chicago, April 13th, to consider the ways and means of protecting the interests of the shippers in this important case. At this meeting, your very able secretary was chosen permanent president. A national organization was formed and plans perfected for defense. A committee composed of four of our ablest rate attorneys, headed by Clifford Thorne, the attorney for your association, had charge of the case for the shippers, and Mr. Thorne directly represented the Iowa farmers and stockmen. To his untiring efforts and the skill and ability with which he prepared and prosecuted the case, we feel that large credit should be given for the result.

The investigations and hearings lasted some six weeks, and were all held in Washington, thus entailing a heavy expense upon all the organizations participating in the expense; but I am sure that you will heartily endorse and approve of the action of your officers in spending this money for the protection of your interests.

It was clearly proven to the satisfaction of the commission that the revenues of the railroads were ample for their needs and for the successful operation of their business; hence the commission decided that the advances were not justified, and denied the carriers the right to put them into effect, thus saving to the shippers of Iowa six to eight million dollars per annum.

When this decision was given out, June 29th, we all heaved a sigh of relief, and breathed easier for a short spell. But a short spell certainly expresses the time for inside of ninety days the eastern roads were again scrambling for advances, and in August renewed their application to the commission for a 15 per cent advance in rates east of Chicago. This situation again brought us into action, as these rates indirectly affect us, and have a direct bearing and influence on our rates west of Chicago. These advances were suspended until December, and the case was tried out in November. Mr. Thorne, Judge Cowan and Mr. Cary, three of the ablest rate attorneys we have, conducted the defense for the shippers, and we wish to assure you that everything possible was done to win this case, and that your interests were well represented.

While this case was being tried out at Washington, the roads operating west of Chicago also became restless for advances, and about November 10th filed a petition with the Interstate Commerce Commission, asking for a reopening of the 15 per cent advanced rate case, and an increase of 15 per cent in the rates on all these lines. These increases, if granted, would directly affect every member of this association and every farmer and stockman in Iowa; therefore, it is very apparent that your organization has a very big job confronting it. The commission has set December 17th as the date for opening the hearing and investigation, and we cannot afford, in my judgment, to take a back seat in the defense and protection of our membership in this very important case, involving many millions of dollars to Iowa shippers, believing, as we do, that these advances are not justified.

The railroads declare they are facing a crisis; that they can not borrow money for betterments and to buy new equipment; that their stocks have depreciated far below their value, and that they are, in fact, squarely up against it if they do not secure advances in rates. Mr. Patterson, speaking for the eastern lines, declared at the close of the hearings recently held, that if those advances were granted, the roads would soon ask for others. So it seems that there is to be no limit to their efforts to increase their rates. It occurs to me that if this situation really exists, and the railroads must have more money to conduct their business efficiently, the government should lend them this money at a reasonable rate of interest until conditions again become normal and they are able to borrow elsewhere. It seems like very bad policy to permit these public carriers to continue to advance their rates in order to buy more equipment, build more terminals, and otherwise increase their holdings, and then capitalize all this increase in value and make the public pay dividends on it. In my judgment, such a policy is not only wrong, but dangerous, and should not be tolerated. The lending of money by the government to the railroads has been advocated by some of our ablest financiers, and it impresses me as the best solution of the present embarrassing situation.

If such a plan as this cannot be satisfactorily worked out, then the government should direct the operation of the railroads during the war, and put a stop to this persistent and endless contention by the railroads for higher rates.

In accordance with a resolution passed at the last annual meeting, your officers co-operated with the officers of the State Live Stock Association of Illinois in securing a reduction of the amount of dockage on stags. After several conferences with the packers on the subject, on July 10th, at a conference in which all the big packers or their representatives were present, we secured a reduction of ten pounds on stags, and on July 16th the dockage was reduced from eighty to seventy pounds. We made every effort to have the dockage reduced to fifty pounds, but were obliged to compromise on seventy. This seems like a small item, but it will save to Iowa swine raisers about $100,000 annually.

Another matter in which this association has played a very important part is in the securing of fair and equitable prices thru the Food Administration fixing the minimum price on hogs. After Mr. Herbert Hoover took up his duties as Food Administrator, he at once began investigating the live stock and meat situation, and in August he and his direct representatives held a prolonged conference and inquiry in Chicago, in which both your secretary and president took an active part. Following the Chicago conference, another was held in Washington, D. C., lasting some three or four days. At this meeting, Mr. Wallace represented your interests, as your president did not feel that he could take so much time from his work of canvassing for memberships and funds with which to finance the association and provide for the heavy expense being incurred.

At the Washington meeting, Mr. Hoover appointed your secretary as a member of the Animal Industry Committee of the Food Administration, and made him chairman of the Swine Committee, thus placing this organization in a position to become a strong factor in determining the questions that vitally affect not only your interests but the welfare of the nation, and also of our allies, and that no doubt will assist greatly in winning the war.

Following that meeting, a number of other conferences and meetings were held at Chicago, Washington and other places, at which this association was represented by Mr. Wallace alone or with me. At the beginning of these investigations, it was very evident that Mr. Hoover had no practical knowledge of what it costs to produce hogs and cattle under existing conditions, and it was only by persistent and continued effort on the part of all concerned that we were able to secure the minimum price of $15.50 per cwt. on hogs. We felt that if the government would allow a fair price, there would be no difficulty in securing a substantial increase in the production of hogs another year. We feel that the price of $15.50, and a price per cwt. equal to the value of thirteen bushels of No. 2 corn is a very liberal provision, and that it is the patriotic duty of every farmer and hog raiser to feed the hogs he now has on hand to a good finish and make them fat and heavy, as it is lard and fats that our allies need, and we must supply them. In addition, we should plan to increase the 1918 pig crop as much as we can with the corn in sight, by breeding more sows and taking good care of the pigs after they are farrowed. I believe that we are confronted by a very serious crisis on account of the pronounced hog shortage, so it behooves each one of us, as loyal American citizens, to bend every effort to assist our government to overcome this situation.

In regard to the fixing of prices on fat cattle, up to the present the government has done nothing along this line except to license the packers and define their profits, and issue a statement thru the Food Administration to the effect that it would do all in its power to maintain prices at a level that will be remunerative to the feeders. Just to what extent the cattle feeder is going to be benefited by this plan is hard for us to say. The fact is that everything now indicates that the cattle feeder is scheduled to take a loss. An unfortunate combination of circumstances has overtaken him. High-priced feeders, soft corn, high-priced protein feeds, and meatless days inaugurated by the Food Department, all tend toward lessening the feeder's profits. In my judgment, the inauguration of two meatless days per week by our Food Administration was the hardest blow that the cattle feeders have received for some time. This has no doubt prevented the consumption of millions of pounds of beef and mutton, and allowed the supply to far exceed the demand. I believe that these meatless days should be confined to pork only, and that a strong appeal should be sent from this organization to the Food Administrator to release beef and mutton for every-day consumption, and that meatless days apply to pork only.

Reviewing the field work of your association in securing memberships during the past year, I will say that it has been one of unusual prosperity. Your president has worked overtime ever since the roads were hard enough to run an auto in the spring, and I am certainly gratified to be able to report that more old members have renewed their five-year pledges, and more new names have been added to the list, by far, than in any year since we adopted the five-year pledge system. In all my experience in this work, it never was as easy to secure members as during the past year. Everywhere we worked, the membership was materially increased, and in many counties and localities it was doubled. Hundreds more could have been secured had there been time and opportunity to get to them. But there is always a limit to human accomplishments, and we could only do so much.

The one thing that impressed me most and was so gratifying in my field work was the very large percentage of splendid young farmers, from twenty-five to thirty-five years of age, who joined the association. This is certainly a good omen, and bids fair for the future, as it is the young men of the state who must soon take over this organization and direct it, if it is to be maintained in the years to come. There are thousands of young men scattered over the state who could be gotten into this organization if only they could be reached.

For your encouragement, I just wish to refer to our successes in the Holstein local association, in Ida county. We made the canvass for renewals and new members during the summer, and when we had gotten them we had 110. I believe that 60 per cent of these were young men, as many of the older men had moved to town. What was done at Holstein could be repeated in many places if the proper effort was put forth and the local people would take more pride in building up their membership.

I was also able during the summer to collect some $600 or $700 on old pledges that were past due. On account of our badly depleted treasury, this certainly came in at an opportune time.

In closing, I would feel ungrateful did I not refer to those loyal men who, during the past year, have sacrificed both time and money to build up this organization. You are so numerous that I cannot name you, and time alone will reveal the results of your sacrificing efforts. But let me say to you, one and all, that words cannot express my appreciation of your friendship and loyal support, and I assure you that the memories of those days will always be to me a most happy and pleasant recollection.

Soon after holding your last annual meeting, our country declared a state of war to exist, because of the ruthless submarine warfare inaugurated by Germany, and other acts of hostility, and since that time our state and nation have been engaged in the greatest activity in preparing for war and assisting our allies. Our boys have been called from their homes to join the colors and protect Old Glory (God bless our flag!) and fight for democracy. We have been called upon to buy Liberty bonds, to contribute to the Red Cross, the Y. M. C. A., and other war relief orders. Thus we begin to realize that we are really at war, and farther along we shall realize it much more keenly. And let me say to you as your president that this is now our war and our fight to see that democracy is made safe to the world, and that it be made impossible for any nation ever again to force upon humanity such a tragedy as this. It makes no difference what our views were concerning this war prior to the declaration made by our country thru its congress; we are now in it; congress and our president have spoken, and we must subjugate our personal views and support our government in the most loyal manner. The charge has been made by some, and heralded to the world by the public press, that the farmers are not loyal and patriotic to their country. I want to call upon the members of this association everywhere to refute this charge by tendering every possible aid to our beloved country in these perilous times. Let us not be slackers in any sense. We must win, and win we will, and God will smile upon us for redeeming the world from the tyranny of Prussian militarism. I wish to recommend that this organization adopt strong and stirring resolutions, affirming our loyalty and pledging our hearty support to our president and the government. And may we all pray that the God of Washington and Lincoln, who watched over our beloved country in those dark and threatening days, abide with and guide and protect our president and our army and navy, and give us a swift and lasting peace.

President Sykes then introduced Professor J. M. Evvard, of Iowa State College, who addressed the convention as follows:

HOW ABOUT THOSE BROOD SOWS?

Members of the Corn Belt Meat Producers' Association, and Friends: It certainly is inspiring to come before men such as you, who have won your spurs in the hard, practical fight of life thru the hard knocks of experience. That is the real way and the right way to learn. In this world-wide conflict, about the only way we can win the laurels which belong to us is to fight for them, and that means to fight for them on the fields of our farms as well as on the field of battle.

The subject assigned to me this morning is, "How About Those Brood Sows?" The brood sow, as you know, is the foundation of the swine production business—the foundation of all swine business, as it were—because in her originates the spark of life that later develops into that 250 or 300-pound hog which eventually produces the hams and bacon and lard and ribs, and so on, for our tables. This means, then, that if the brood sow is the foundation, she should be given the best kind of treatment. It also means that she should first and primarily be selected upon the right basis. We don't want to select fat hogs primarily fit for market to go into our brood sow pen. Now, what shall we pay attention to when we select our brood sow? First, I am going to take up the question of treatment, because that is more important than anything else.

In the first place we want to have these sows healthy and free from lice and mange. By healthy, we mean preferably that they should be immunized against cholera, so that we will not carry the heavy risk that we would naturally carry if these sows were susceptible to that dreaded and terrible disease. When we realize that a new-born pig costs us at present, just for feed alone, at least a dollar, and that the sow will bear on an average something like eight or nine, it makes a total of eight or nine dollars wrapped up in this sow in addition to her real value, which, if she weighs 300 pounds, and is worth $15 per cwt., which is low, would be $45 plus $8, which is quite an investment compared to a number of years ago, when a brood sow was not worth more than $20 to $35. Twenty dollars was a pretty high price five years ago. We must take care of the lice, and the best remedy is simple crude oil as it comes out of the ground. It can be bought very cheaply; it has not gone up in proportion to other things and a liberal application of that, winter or summer, is enough to drive the lice to their last heaven. It is fine in winter because it does not contain water to evaporate and chill the sow. In summer, you can place it in your hog wallow in an old can, get your pigs up in a corner, and with an old broom rid your sows of lice. Of course, you will get pretty well spattered up.

Once in a while we are troubled with mange in hogs, and you can notice it by the hard, scaly legs, and by the red patches which appear on their under sides. What can we do for that? If you go to select a bunch of sows, and find them scratching their bellies, you want to look out. The best thing we have found is a lime-sulphur solution—the same thing that you put on your trees to kill scale. We buy this from a horticultural house and mix it with about eight parts of water, and dip the sows in that. Two or three applications usually are sufficient to rid the hogs of that trouble. Crude oil is good; nicotine is good. You can buy this black leaf nicotine from tobacco companies and mix it with a sufficient amount of water, and put your hogs in that. The nicotine is poisonous to the mange and kills it out, and if you give these sows a good soaking, this parasite is a gone gosling.

How about worms? We don't notice brood sows manifesting the worm trouble as we do little pigs. Little pigs, which have small digestive apparatus, show it plainly. Their bellies and abdomen sag down, and they walk feebly, and they root each other. Worms make a bigger showing with them and are much more disastrous. But an old brood sow can have a hundred or two hundred worms and you not notice it. But if she is carrying them and dropping the eggs, the little fellows, when they are born, will be fit subjects for these worms to take up their new home. Thus we want to treat our brood sows for worms if we are suspicious that they have them, and the best thing I know of is santonin and calomel. There are a lot of remedies on the market. Santonin is expensive, but hogs are expensive also. I bought some santonin at wholesale the other day for $2.50 an ounce. I had bids from four different concerns running from $2.50 up to $5.00; so I took the cheapest, and we noticed no difference particularly. When drugs are fairly scarce, often there is a great variation in the markets, and it is well to get prices from three or four different firms. It is not at all like normal times. We mix the santonin and calomel together and feed it with the regular feeds. Some advise that you starve these sows for twelve hours before giving it to them. The dose is anywhere from five to fifteen grains for a brood sow. There are 480 grains in an ounce, so you see it is not so very expensive after all. There is no set rule for the dose; you can use your own judgment. I would not in any case give more than fifteen grains to any animal, and very seldom over ten. To a young sucking pig, four or five grains; for a 200 to 250-pound sow, ten grains to a 300 to 350-pound sow, eight to twelve grains, depending on how she looks and on whether you are a little tight that day. If you have your sows in a group and feed them tankage (meat meal, preferably), mix it up thoroly, and if they feed proportionately they will get their proportionate amount. There is an instrument on the market to use for giving capsules to pigs. You put your dose in the capsule and then you simply open the pig's mouth and shoot this in. Then you are sure every one gets its share. But if you mix up ten pounds of feed and you have five sows, they will get their share apiece.

We should have these sows not only healthy, but robust and strong. You can have a healthy sow, but a weak one. Some people are as healthy as they can be, but they couldn't go out and do a day's work in the fields. The brood sow should be of good formation, have abundant length and width, and that width should be carried equally from the fore-quarters to the hind-quarters. She should have good depth; in other words, she should be spready in those particular dimensions whereby we get more pork, especially from the ears back. That is where the pork is, and the highest-priced pork, of course, we secure the farther back we get. It is like a steer. We want an animal that has a good ham, because hams command a premium as compared to other portions of the hog. We like to have good legs and feet, because this animal has to carry this pork around. We like to have her show a good middle, because that is indicative not only of maternal qualities, but of capacity. The feed goes into this intestinal alimentary apparatus, and then is converted into the flesh of the animal itself, which is built externally to the intestinal apparatus. Therefore, we want to have a sow that shows indications of capacity, so that she will not only eat considerable feed herself with the right opportunity, but will make good use of it and transmit this quality of capacity, so that her pigs will eat a great deal and get to market in the shortest possible time. It is well, I think, to avoid the sows that look as if they had been caught between two doors, end and end, and shoved up; they are more likely to be wheezy. So we want to take the hog that is stretchy and shows development. The ideal that I have in mind for a brood sow is one that will farrow pigs which will grow to heavy weights if you want them to, but if you wish to finish them out at 225 pounds, under conditions of suitable feeding, they will do so. In other words, I want more than we usually get, but I think there has been some progress made in recent years in developing a hog of that sort.

We want this brood sow to show maternal or mother quality—plenty of good, sound teats, all indicating they are functional. In the case of the sow that has had some litters, you can tell pretty well what teats have been functional and which have not. We want one that will produce milk—the fountain-head of youth so far as the young pigs are concerned; it gives them a start in life. We want her to show a quiet disposition, because that is quite essential at farrowing time; particularly we want her to lie down and beckon in a motherly sort of way, rather than get up and bite in a boarish sort of way. We want her to show a fine female appearance, which really means an absence of coarseness. We don't like the sow that has a heavy crest and shoulders, but one that shows refinement in the head and bones and in the hinder parts. Then we like to have a sow that is a good breeder and not shy; one that will produce pigs if you give her the right sort of opportunity.

We will consider weight for age. If we have an eight months old gilt that we are going to breed, we are not satisfied if she weighs 150 pounds; she ought to weigh at least 225, preferably 250 or 275 maybe 300. The chances are that if she didn't take on sufficient weight for her age, her pigs won't do it. We want to look out and not sell off the heaviest ones every fall. If we always pick the top ones, we are injuring the herd; it is better to keep those for breeding purposes. If you have yearlings at twenty months, we would not be satisfied if they only weigh 200 pounds; we want them to weigh 325 to 400; and if they can take on heavier weight and do it without excessive fatness, so much the better.

How about condition? It is well, I think, to have sows fat, to see what they will do; yet when we have them on our farms we can't afford to keep them in such fat condition; it makes them sluggish and tends to decrease their vigor. So we want a brood sow to be not too fat, but to look as near like a lady hog as possible, and under average farm conditions, it is poor policy to carry them over-fat. Fat put on with the right sort of feeds and abundant range, where the animal gets plenty of exercise, is much better than putting them in a close pen, weakening their strength, and fattening them under those conditions.

How about the age of sows? The vast majority of sows kept for breeding purposes in Iowa are gilts. That is particularly true the last two years. Gilts have many advantages over old sows, but they have some disadvantages. Primarily, we keep gilts because there is less capital invested in them, because we can turn them quicker, because they are putting on a little flesh continuously and increasing in value, while that is not true of an old sow. A gilt won't farrow quite so many pigs, is not so sure, and you have to keep more of them to get a certain number of pigs to meet your demands for the coming year. They won't be quite so large at farrowing time, neither will they be at weaning time. But the old sow takes more feed to carry her thru the winter than a gilt, and it is a toss-up as to what you shall do. The breeder who is depending upon foundation stock wants to use old sows, because he knows what they will do, and he has a certain amount tied up in them because of their breeding potentiality. But with the market man it is different. Gilts properly managed, fed rightly, and cared for well, do splendidly. Of course, it is a little more of a gamble; you don't know what the gilt will produce until she produces. There are so many advantages in keeping gilts, however, that we do keep them in practice.

How about the breed? Well, that is a very broad subject, and there are a great many different breeds on the market, as you know. Just what breed we shall use depends on a number of conditions. For instance, you have to decide whether you will breed lard hogs or bacon hogs. You may live in a certain community where you can get more from your neighbors for Poland Chinas, and, if so, your choice will simmer down to that breed. Then there is the question of feeds. If you live where there are feeds more or less bulky, like oats and barley, as in Canada, then you will want to have a little different animal than in the corn belt, where corn is fed in large quantities. A bacon hog doesn't have to be made nearly as fat as a lard hog; the price is lowered if you make them very fat. You can get them to a certain weight on a lighter feed than you can a lard hog. There is a great problem of personal preference. You have a lot of ideas that you don't have any real reason for. If we were all built exactly the same and liked the same sort of women, then there would be just one wife for all of us—and that wouldn't do. So we have to average the thing up, and the human being, anyhow, is such a complex organization in itself that it takes a complete organization to meet his ideas.

How about the management of the sows after we have selected them? Housing might come first, because we have to build the house. That is one of the first things we think about: Where are we going to keep them? We must remember that a hog is not built like a sheep. He has not that excessive wool covering one or two or four inches over his back and sides. Therefore, he is not kept as warm as a sheep naturally; so artificially we have to keep him warm, particularly in the winter. Sheep do very well in open bunkers, because they are naturally protected. Put sheep into a warm house that is good for hogs, and they won't do well; the wool will lack luster, the sheep will become sluggish, and they will require more feed than if you put them in those open conditions, protected from rain and wind storms, but not particularly from cold. A brood sow under those conditions does not do well; she makes an attempt to grow a big, heavy coat, but is not successful. You want sheds with low walls, so that you won't have to heat up a large amount of space in order to warm the particular shed or house in which they live. Plenty of bedding is necessary. Then you should not feed them out in the rain and hail and snow. A hog doesn't any more relish eating outside with the temperature 20 degrees below zero than you would eating your Christmas dinner out in the evergreens. Particularly is this true with a fattening hog. If you make the hogs run out to eat, they run out, grab an ear of corn, and run back; whereas, they ought to have seven or eight ears. Then they are going backward rather than forward. This house should not only be warm, but it should be built as to furnish sufficient shelter without overcrowding. It should be dry; hogs don't prosper very well in damp quarters. It should be well ventilated, kept clean, and should get a little sunshine now and then.

What are the next points? Range and exercise. It is possible to raise very strong and healthy pigs by having the sows in small lots 60x90 feet; but you have to use some schemes in lots of that sort to induce action, like feeding them at one end and watering them at the other. Another means of inducing exercise is to allow these sows to follow cattle. Of course, when the sows get very heavy and clumsy, it is sometimes advisable to take them out of the cattle runs, particularly if the cattle are inclined to be a little rough and inconsiderate of the pigs within. Give them ears of corn; they take more exercise than if the corn is shelled; they chase the ears around and get a little different angle on them, and put their heads down. Scatter out a little oats for them. Alfalfa is good; they will spend considerable time pulling it out. Shut them out of the house sometimes on warm days; give them range on pasture where they can find something; even let them range on pasture where they can find something; even let them run in the corn fields on a nice day. When the snow is real deep, take your snow plow and make a figure 8 and feed them at one end of the figure, and they will follow the path around.

A disease which is becoming quite epidemic in Iowa is hemorrhagic septicaemia. It strikes down herds that run upon land that has been overflowed. The veterinary department at Ames has been working upon it, and they have vaccine serum that they use upon cattle to immunize them, and also as a remedy after they have the disease. We have tried it on hogs and have found that apparently it does some good, altho we want to get a better remedy.

Gentleness is another thing that should be practiced with brood sows. They are more liable to develop a gentle and kindly spirit, and that is important. It is well to keep the brood sows coming always thruout the pregnancy period, and to have them in such condition that at breeding time you can make them gain in weight about a week or ten days before you start to breeding them. This insures in large measure that you will settle your sows more quickly, and that they will farrow more pigs.

Now we come to feeding—how about that? It has been a great temptation in the corn belt to feed corn alone. You all know what the disastrous effects are. Just for your information, I am going to give you a few results in the feeding of young gilts upon different rations.

The feeding of corn alone is poor business. Why? There are a number of reasons:

First—It lacks protein quantity, which really means that there is not enough present.

Second—It is deficient in protein quality, which, said differently means that corn proteins are not as high-class as they should be. In other words, they lack some of the necessary building-stones which make up the proteins. Proteins are really very complicated in construction, and are built up of some eighteen different units. We have various kinds of proteins, such as the casein in milk, which is a very good protein to feed with corn. Why? Because it supplies in its make-up most of the essential missing amino acids or building-stones of corn. Then there is the protein of corn called zein, which comprises some 50 per cent of the total proteins. This protein is lacking in two particularly important building-stones, called by the chemist "trytophane" and "lysine." Both of these are essential to growth and well-being. Casein furnishes these. So do some other proteins, like the protein of alfalfa, or the proteins of meat meal, or the proteins of red clover, or rape pasture, or young, tender blue grass, and so on.

Third—Corn is deficient in mineral nutrients, particularly calcium, which comprises some 40 per cent of the dry ash of bone; also in phosphorus. We have also found that it is helped by adding common salt to the ration; preferably giving it at free-will.

Fourth—Corn not only lacks mineral elements in toto, but the proportion is not right; hence they have to be re-mixed in order to do best. It so happens that the minerals of milk and the minerals of alfalfa, when added to corn, make up a mixture of mineral elements that is of higher quality than of the corn alone; this is very fortunate.

Fifth—Corn is, generally speaking, constipating in character when fed alone; hence, by adding the proper kinds of supplements to it, it can be made laxative. Undoubtedly, the bettering of the protein quality, as well as increasing its quantity and also the balancing of the ration so as to make the mineral elements acceptable, are of great importance in making the ration laxative. Then, too, when we feed these proper supplements with corn, we find that we are adding, in the case of meat and milk and alfalfa, for instance, two unknowns, called "vitamines," or food accessories. One man has facetiously referred to the unknowns as the "soul" of the feed. A noted expert has called one, the fat soluble, "A", because it is found in large quantity in butter-fat. He has named the other one, water soluble, "B", because when wheat germs, for instance are soaked in water this particular unknown somehow and in some way is transferred to a watery solution. Adding these to corn helps it out, and when we add meat and milk and alfalfa to the ration, we add these unknowns—these "elements of the soul", as it were.

Now corn is particularly important in that it carries a high proportion of starches and carbohydrates, the materials that furnish the energy for growth and development, and also the materials which later are turned over into the fat for storage. Now corn is a very healthful feed, and does not contain any poisonous principle, like cottonseed meal; this is in its favor. It is highly concentrated, which means that you get more feed in a hundred pounds than all other feeds excepting such feeds as wheat flour or rice. It contains a liberal amount of fat, altho perhaps the average ration could stand a little more fat from the physiological standpoint, to good advantage. Of course, it can hardly be supplied economically excepting in such feeds as soy beans, or meat meal tankage, and we can not afford to feed the milk fat, because we skim that off and sell it.

What are some of the rations that will give the best results? In 1910, 1911 and 1912, we fed a number of rations to gilts and yearling sows. The average farrow on these rations, the average daily gain, and the feed eaten, are given in Table I.

TABLE I—FEED RECORD.

Results at the Iowa Experiment Station, 1910, 1911, 1912, Animal Husbandry Section. Gilts—Five in all lots but last, which had eight.

Ration Fed	Average farrow	Average daily gain	Daily corn (shelled basis)	Daily Supplement
Ear corn only	7.6	.354	3.65	
Ear corn plus 1-30 meat meal or tankage	7.4	.582	3.21	.127
Ear corn plus 4-30 meat meal or tankage	8.8	.625	2.75	.432
Ear corn plus 1-3 O3, B3, M3, OM2	10.6	.350	2.73	1.074
Shelled corn plus chopped clover and molasses	7.0	.580	3.78	1.560
Ear corn plus clover in rack	6.4	.529	3.67	.302
Ear corn plus alfalfa in rack	7.6	.627	3.74	1.106
Ear corn plus 1-10 meat meal or tankage	8.5			
Yearling sows—ten in each lot.				
Ear corn only	9.2	.586	4.97	
Ear corn plus 1-10 meat meal or tankage	10.1	.779	4.11	.600
Ear corn plus 1-4 oil meal, linseed meal, old process	8.8	.671	4.06	1.129
Ear corn plus alfalfa in rack	9.9	.643	5.05	.267

Molasses (.261) mixed with the chopped clover and shelled corn daily; oats 3, bran 3, middlings (wheat) 3, and oil meal 2 parts, by weight.

We have found that on rations which are of balanced character, rations that minister well to the nutritional needs of the sow, that said sow receiving these rations during the period of breeding, farrows more pigs and stronger pigs than where an improper ration, such as corn alone, or wheat alone, or barley alone, or rye alone, is fed.

In other cords, by keeping the sows coming during the breeding season, making them gain abundantly, we are insured of litters of a larger number. This practice is called flushing. The sheepmen have taken advantage of this for years. Some of the good feeds with which to flush the sow, using corn as the base, are meat meal, milk, alfalfa pasture, rape pasture, red clover pasture, or tender young blue grass.

Table II gives the offspring record of the sows fed these various rations, the feeds and gains of which are given in Table I.

TABLE II—OFFSPRING RECORD.

Results at Iowa Experiment Station, 1910, 1911, 1912, Animal Husbandry Section. Gilts—Five in all lots but last, which had eight.

Ration Fed	Weight of litter (pounds)	Av. weight per pig (pounds)	Per cent strong	Per cent medium	Per cent weak	Per cent dead
Ear corn only	13.20	1.74	68	16	16	
Ear corn plus 1-30 meat meal or tankage	14.89	2.01	92	5	3	
Ear corn plus 4-30 meat meal or tankage	19.62	2.23	93	5	2	
Ear corn plus 1-3 (O3, B3, M3, OM2)	19.50	1.84	83	6	6	5
Shelled corn plus chopped clover and molasses	15.32	2.19	86	------	11	3
Ear corn plus clover in rack	14.17	2.21	94	------	6	
Ear corn plus alfalfa in rack	17.41	2.29	89	8	------	3
Ear corn plus 1-10 meat meal or tankage	18.00	2.12	98	------	------	2

Yearling sows, ten in each lot.

Ear corn only	17.06	1.85	41	35	20	4
Ear corn plus 1-10 meat meal or tankage	24.42	2.42	85	5	5	5
Ear corn plus 1-4 oil meal, linseed	19.50	2.22	76	15	5	4
Ear corn plus alfalfa in rack*	17.56	1.77	37	25	32	3

*Actually almost a corn-only lot; sows ate but little alfalfa from rack. To insure alfalfa consumption is ofttimes a perplexing problem.

It is well to note that meat meal, clover and alfalfa are splendid supplements to corn, because the pigs are bigger and stronger. It is well to note, however, that alfalfa in a rack is not a "sure-shot" mixture, because yearling sows in this instance did not eat enough of it; hence their pigs came weak simply because they did not take to the alfalfa in the rack. Here is a case where the free-choice system went wrong. Had this alfalfa been pasture rather than hay, there would not have been any question about the sows eating enough of it, but as it was they were inhibited, I think, by its fibrous content, and hence did not eat it. Some feeds have inhibitors, you know, which keep the animals from eating of them, even tho the feeds in themselves are pretty good otherwise; some little thing will keep them away from the feed much like a little latch on a barn door will keep prowlers out, or the hairy covering of a cocoanut may discourage one and make him believe that the inside is not so good as it really is, and so on. We should insist that the brood sows that get alfalfa in a rack should eat at least a pound per head daily, if we want to be assured of good results.

Table III shows the coat character as affected by the ration. Meat meal and oil meal make lustrous, heavy coats; corn alone tends to produce coats of the unborn pigs that are scanty, ofttimes the pigs being hairless. Oil meal has been noted for many, many years as a coat producer. These figures bear out that reputation.

TABLE III—CHARACTER OF COAT.

Results at Iowa Experiment Station, 1911, 1912, Animal Husbandry Section.

Ration Fed the Sows	Heavy coat	Medium	Light coat
Corn only	53	33	14
Corn plus 1-10 meat meal or tankage	82	15	3
Corn plus 1-4 oil meal, old process	88	8	4

That the size of bone is affected by the rations fed the sows is certainly presented clearly in Table IV, giving the circumference of the front and hind shins of the new-born piglets. Note that meat meal is better than oil meal, but note clearly that both meat meal and linseed meal are clearly superior to corn alone; in other words, these two supplements added to corn make the corn ration superior.

TABLE IV—CIRCUMFERENCE OF SHINS.

Results at the Iowa Experiment Station, Animal Husbandry Section. (Measurements in centimeters, equal to practically two-fifths of an inch.)

Ration Fed to Sows	Hind shin	Front shin
Corn only	4.63	4.39
Corn plus meat meal	5.05	4.83
Corn plus linseed oil meal	4.92	4.67

Table V gives the rations, number in litter, and other characteristics of the litter of an experiment we ran in 1913, 1914.

TABLE V—EFFECT OF RATIONS.

Results at Iowa Experiment Station, Animal Husbandry Section, 1913, 1914. Effect of rations fed gilts on resulting litters.

Ration Fed to Sows	Number in litter	Size and average weight	Av. circumference of shins fore and hind (inches)	Av. strength of litters (100 perfect)
Corn only	5.6	2.12	1.86	79
Corn plus 200 per cent buttermilk	9.8	2.23	1.85	88
Corn plus 140 per cent ground alfalfa	9.6	2.19	1.86	83
Corn plus alfalfa in rack	7.6	2.13	2.00	92
Corn plus 10 per cent meat meal	8.8	2.48	2.01	95

The above figures are self-explanatory. Note that the well supplemented rations are instrumental in producing more pigs at birth; also that these pigs are heavier; also that on the average they have larger bones and are stronger. These characteristics are all desirable in the feeding of the brood sow.

The feed eaten and the gains of these gilts are given in Table VI.

TABLE VI—FEEDS AND GAINS.

Results at Iowa Experiment Station, Animal Husbandry Section.

Ration Fed	Av. daily gain	Corn grain	Supplement	*Cost per day crediting gains at 5 cents	**Actual feed cost of new-born pig
Corn only	.37	4.11	--------	1.82	.46
Corn and buttermilk	.51	2.84	5.83	1.45	.46
Corn and ground alfalfa	.50	2.11	3.00	1.49	.48
Corn and whole alfalfa	.50	3.94	.48	1.25	.39
Corn and meat meal	.49	3.24	.33	1.27	.43

*Corn, 50 cents (if ground, 53 cents) a bushel; buttermilk, 25 cents per cwt.; alfalfa, $10 (if ground, $12), and meat meal, $50 a ton.

**Crediting gains at $5 per cwt.

The above table is self-explanatory. It is suggestive, however, that all of the gilts receiving supplements to corn have cheaper maintenance figures than those receiving corn alone. Here again milk, alfalfa and meat meal show up to very good advantage.

Table VII gives some results of Evvard and Dunn, of the Iowa Experiment Station. Animal Husbandry Section. There is given in this table the weights, gains and feed eaten by gilts receiving hominy feed, tankage and alfalfa.

TABLE VII—FEED EATEN.

Results at the Iowa Experiment Station, Animal Husbandry Section. Average daily feed eaten per gilt.

	Av. initial weight	Av. final weight	Av. daily gain	Hominy feed eaten	Tankage eaten	Alfalfa eaten	Rock salt eaten	Total feed eaten
Lot 1	238.74	311.80	.54	3.20	.40	--------	.01	3.61
Lot 2	240.14	317.32	.56	3.09	.20	*.80	--------	4.09
Lot 3	238.00	311.10	.52	3.21	--------	*1.60	.01	4.82
Lot 4	238.34	315.00	.54	3.22	--------	*1.81	.01	5.03
Lot 5	239.54	313.82	.56	3.01	--------	**2.12	.01	5.13
Lot 6	237.34	313.14	.55	3.28	--------	**2.37	.01	5.66
Lot 7	237.80	305.20	.50	3.20	--------	***.76	.01	3.97

*Ground, dry. **Ground, wet. ***In rack.

There were seven lots in all, and they were fed as follows: Lot 1, hominy feed and tankage; Lot 2, hominy feed plus half as much tankage as Lot 1, plus enough ground alfalfa mixed with the hominy and tankage to furnish the same amount of protein as the two-tenths of a pound less tankage fed this group; Lot 3, hominy feed plus dry ground alfalfa, no tankage whatever, approximately the same amount of protein being fed in the ground alfalfa as the gilts would receive in four-tenths of a pound of tankage. It took practically four pounds of the ground alalfa to furnish as much protein as a pound of tankage. The object was to see if ground alfalfa alone would entirely substitute the meat meal. Lot 4 was fed the same as Lot 3, with the exception that an effort was made to get as much ground alfalfa into these gilts as possible. Lot 5 was fed the same as Lot 4, with the exception that the alfalfa was wet, and as much was fed the gilts as possible. By wetting the alfalfa we could induce a larger consumption. Lot 6 was self-fed on a mixture of ground alfalfa and hominy feed. We regulated their gains by increasing or decreasing the ground alfalfa in the mixture. On the average it can be seen that they ate practically two-thirds as much ground alfalfa as of hominy feed. With Lot 7, hominy feed was fed in one trough and alfalfa was allowed in a separate rack. This was the straight, whole, natural alfalfa as it comes out of the stack—in this case, out of the barn. In all cases, rock salt was allowed at free-will.

We attempted to make the gilts gain as nearly a half a pound daily as possible. You can see that we succeeded; hence the big differences are to be grasped and studied from the feed figures because the gains are practically the same.

Note carefully that where we fed an extra large amount of ground alfalfa, it took actually more feed to keep the gains up, or 5.66 pounds daily as compared to 3.61 where just corn and tankage were used. This shows clearly and unmistakably that corn and meat meal or tankage is a highly concentrated feed, and it takes somewhere around three-fifths as much by weight of that sort of ration, namely, corn plus meat meal or tankage, as it does of a ration of corn plus ground alfalfa. In this case, of course, we used hominy feed, but we consider hominy for gilts of about equal value with corn. Hominy feed, you know, is a by-product of the manufacture of corn meal for human consumption, and is entirely a corn product.

The more alfalfa we put into the ration, that is, the more we made the gilts eat, the more total feed it took daily per gilt to keep up their weight. And where we made them take an exceptional amount of alfalfa, as in the self-fed ration of Lot 6, the most feed was used. Or compare Lots 3 and 4—Lots 4 took more feed because the alfalfa was increased.

One can about figure out in a rough way from these figures that it takes about four tons of alfalfa, where it is fed as a lone supplement to corn, to do the same amount of good as a single ton of tankage. This was just average alfalfa that we fed—not the best. If one has an exceptionally fine, leafy grade, I would expect it to take not more than three tons of that sort of material, but for average alfalfa four tons will not miss it very much.

However, where we add ground alfalfa in limited quantities along with some tankage, it has a higher value, as the figures show.

Now, how about the litter record? The number in the litter, the average weight per pig, and their average strength, are shown in Table VIII, which is presented herewith.

TABLE VIII—LITTER RECORD.

Results at the Iowa Experiment Station, Animal Husbandry Section. Showing average strength of litters.

	Av. number in litter	Av. weight per pig	Per cent very strong	per cent strong	Per cent medium	Per cent weak	Per cent very weak	Per cent dead
Lot 1	8.4	2.50	52.38	38.10	4.76	2.38	--------	2.38
Lot 2	9.6	2.68	60.42	18.75	14.58	--------	--------	6.25
Lot 3	9.0	2.73	75.56	20.00	--------	--------	--------	4.44
Lot 4	8.0	2.86	72.50	12.50	10.00	--------	--------	5.00
Lot 5	7.6	2.43	42.11	34.21	10.53	2.63	2.63	7.89
Lot 6	9.4	2.56	65.96	14.89	8.51	--------	2.13	8.51
Lot 7	8.6	2.70	51.16	34.88	4.65	--------	--------	9.30

It will thus be seen that practically all the rations made a very good showing. It would appear from these figures that alfalfa, from the standpoint of the little pigs born, is equal as a substitute to meat meal or tankage. Of course, we always have to keep in mind the economy. Group 7, fed a moderate amount of ground alfalfa, made an exceptionally good showing. We find that we have the greatest number of dead pigs in those groups which fed themselves; this may be mechanical. Both Lots 6 and 7 were self-fed, Lot 6 self-fed entirely, while Lot 7 was self-fed on alfalfa. This means that they have to get into an open trough or rack, and that postiion may be strained sometimes; at any rate the largest percentage of dead pigs was found in these two groups. We notice, however, that Lot 5 had quite a few dead pigs out of a hundred—practically eight—which would indicate also perhaps that as compared with Lot 6 excessive alfalfa feeding might have something to do with it, altho this is merely a bare hypothesis. In truth, to be really accurate one had better call it a guess, because there is not enough evidence to make an hypothesis out of it.

At any rate, these figures show clearly that ground alfalfa can be fed to good advantage to pregnant gilts along with hominy feed, which really means that it can also be fed to good advantage along with corn.

Some good swine rations for the corn belt, for the breeding herd, may be described as follows:

From one-third to two-thirds of a pound of tankage per head daily for gilts and older sows, in conjunction with as much corn as is necessary to keep them in the condition desired. The corn may be substituted with hominy feed, or oat meal, or barley, or wheat, or rye, depending upon the economic conditions. Generally speaking, corn is the most economical.

The meat meal or tankage may be substituted with two other products—skim-milk or butterwilk, or alfalfa to very good advantage.

It requires about fifteen times as much milk, pound for pound, as it does of tankage; otherwise the rations would be the same with milk as with tankage. This really means, then, that if one feeds milk he should feed from five to ten pounds daily per head.

With alfalfa hay one should insist that the gilts eat at least a pound per head daily; sometimes only three-fourth of a pound will give fairly good results, but to be sure one should insist upon the gilts eating a pound, and the same is true of old sows. If they will eat this out of a rack, this is the most economical way to supply it; if not, it should be ground and mixed with other feeds. In addition, feed enough of the other grains mentioned—corn, hominy and so on—to keep them up in condition.

Of course, for fall litters the most economical feeds are pasture feeds, such as alfalfa pasture, or rape pasture, or red clover pasture, or young, tender blue grass—these and corn make a very acceptable ration. To play safe, it is well to add a little tankage or a little milk the last thirty to sixty days of the gestation period. This is particularly important because during the last months of pregnancy, practically 90 per cent of the dry matter of these little pigs is formed in utero.

There is another product called corn oil cake meal, which can be used to good advantage to substitute a third to a half of the tankage or milk in the ration. But, instead of feeding, therefore, a half pound of tankage, as might be the determined ration, along with what corn is necessary, one could feed a fourth of a pound of tankage plus three-fourths to a pound of corn oil cake meal. Or, in the case of its replacing milk, suppose the determined allowance of milk was 10 pounds per head daily per gilt or old sow, the milk allowance could be put at five pounds, and corn oil cake meal fed to make up the balance of milk, five pounds, by allowing a pound and a half of corn oil cake meal, or about two-fifths as much as of the milk. With this extra allowance of corn oil cake meal, one would not need to feed so much corn. Of course, the relative proportions of all of these feeds may be subject somewhat to change, depending upon economical considerations, but, generally speaking, the young gilt's ration in the dry lot, as well as that of the old sow, should contain at least a third of a pound of tankage—better a half pound, or five to seven and one-half pounds of milk at the minimum, or at least a pound of alfalfa hay.

Most assuredly, to get strong, healthy pigs at birth, one must insist first and above all upon the right kind of gilts—strong, robust, healthy ones. They must then be fed right upon the right kind of feeds, with plenty of protein, mineral elements, vitamines, and so on, to balance the corn or other ration. Then the sow must not be too fat nor be kept too lean. The sow must be exercised. She must be provided with a fairly warm, ventilated bed, in a sheltered house, with plenty of bedding. The lice must be kept away. The worms should be attended to. Constipation should be avoided. And then it is well to practice gentleness with your brood sows; speak to them kindly. They are animals, just as we are, and respond gallantly to good treatment, and good treatment of them on our part bespeaks contentment on their part, with its corresponding profits to us.

AFTERNOON SESSION.

The first address of the afternoon was by Frank G. Odell, secretary of the Federal Land Bank at Omaha. Mr. Odell said:

THE FEDERAL LAND BANKS.

Mr. President, and Gentlemen of the Association: Altho the federal land bank in the eighth district, with which I am connected, has its office in the city of Omaha, it is very much an Iowa institution. That is evidenced by the fact that new business is coming to our bank now from your state at the rate of over a million dollars a week. It is an almost incredible sum, and it is going to be a pretty big task to handle it; but we are handling it very nicely. To those of you who have no adequate idea as to the amount of money which is represented by mortgages on Iowa farms, it might occur to you, perhaps, that in the course of a few weeks, at the rate of a million dollars a week, we would get all the business in Iowa. Well, if we were to continue to get it at that rate, it would take us 650 weeks to get all the farm mortgage business there is in Iowa now, and 650 weeks is quite a spell, as they say down in Kentucky. For the farm mortgage debt of Iowa at this time is, in round numbers, about $650,000,000, which represents the largest volume of mortgage debt upon farms of the same size upon the face of this earth. To finance your future operations as breeders and maintain the agricultural standard of which this state is justly proud, and for which, it is famous, it will be necessary for you Iowa men to look pretty carefully to your financing in the future.

I want to call your attention in passing, and as a preliminary to what I consider the most important and critical problem which faces us as we are entering this world war. This war is going to be won with food, but there is absolutely no doubt in my mind, and none in the mind of any real red-blooded American, that this war is going to be won with American soldiers, with American money, with the products of the American farm, and with American spirit and heroism. We don't realize yet, friends that we are in the midst of war. Only those of us who have some boys over at the front, or going to the front soon, are conscious of that intimate touch which is felt by the home from which a boy has gone out to serve his country. I wish every man in America, and particularly every farmer, could understand that our country is in the midst of the greatest war that history has ever known —a war upon which not only the future of this country and the future of every farmer in America, but of all humanity, depends absolutely.

This is no time to stop and argue about the wisdom of having entered this war. It is no time to indulge in any half-hearted loyalty to this government. We are in this thing from the purest and highest and holiest of motives, and the quickest and shortest and cheapest way to end it is to go right straight thru to victory; and we are going thru. Upon the farmer rests the greatest burden of this war. He is the man who, by his energy and toil and the sacrifice of his family, must furnish the last ounce of food that is necessary to feed the armies of this country and its allies, and our government recognizes that fact absolutely. You are called upon to speed up your production to the highest possible limit. You are going to be called upon in every conceivable way which will intensify the products of American farms and bring this thing to a conclusion as quickly as possible. That means vastly increased expenditures for the farmers of Iowa. It means that this tremendous burden of over a half billion dollars of farm mortgage indebtedness which now rests upon the broad acres of this state must be extended over a period of years long enough, at a rate and upon terms reasonable enough, to enable you to handle your farming operations with safety and profit, and to do your duty to your country and at the same time support your families in reasonable comfort. That is the biggest job that the American farmer has ever faced. We have to face, too, the probable reaction which will come after the war. So that if there ever was a time in the history of this country when the American farmer needed to look with extreme care in his financial operations, that time is right now.

When the federal farm loan act was passed, nearly two years ago, it was almost inconceivable that our country would enter this war. The passage of the farm loan act, and the movement that led to its adoption, were not founded in any sense upon the possibility of this war. The act was founded upon the absolute need of the American farmer, who was paying charges larger than ordinary business procedure and profit would permit, in order to relieve him from those charges in the financing of his future operations. The farmers of this country were borrowing money on the average at about 6½ per cent, taking the country over. They were, in addition to this, paying commissions and brokerage charges on renewals of loans for various periods, usually five years. When we computed the interest upon the farm mortgage debt of this country, and struck the balance of trade, when we began to send our farm products abroad, we found that we were handicapped to the extent of about two per cent on every dollar that we borrowed, and that our foreign competitors had that much advantage over us when they met our products in the market. It was an economic condition which could not continue. Consequently, the best thought in this country was put upon the solution of this problem. The federal farm loan act was passed, and went into operation on the 17th of July, last year. The farm loan board was created under the authority of that act, consisting of five men, with the Secretary of the Treasury chairman ex-officio. After extended hearings, continental United States was divided into twelve regional land districts and twelve banks established. The eighth district was composed of Iowa, South Dakota, Nebraska and Wyoming, and the bank representing this district was located in Omaha.

The title on your program is "Borrowing from the Government." I want you to forget that. When you borrow from a land bank, you are not borrowing from the government at all; you are actually borrowing from yourselves; you are borrowing from a loan institution. It sounds like a sort of financial paradox, doesn't it?

How does it happen that the railroads, steel corporation, great manfacturing industries, great mercantile enterprises, have been able for many years in this country to get an interest rate of from two to four per cent lower than the farmer can get upon the best land security in the world? Simply because the geniuses of American business and finance have co-operated, and the credits of these great industrial and transportation enterprises have been mobilized in one mass, and their securities have been taken to the money market in a sufficient volume, and, based upon the credit so brought, they have been able to get the lowest rate there was.

The farmer has dealt as an individual with combinations which are irresistible and beyond his control. Now I believe in individuality. It is the thing that has made America great. I don't believe in too much of it, however; there is such a thing as going to the extreme. The development of all human society is based upon a reasonable amount of selfish co-operation. That is just the reason this association was organized fourteen years ago; that is why, thru all these years, it has continued to do the things which have been for the interest not only of every member of this association, but of every live stock raiser of the state, and every state that touches this. You men have co-operated for your mutual interest and for the interest of those who were not co-operating with you. And so it is that great co-operative enterprises have sprung up all over this country. The difficulty has always been, in the handling of his own personal, financial problems, or of his marketing problems, or of any problem on which the farmer touches the outside world of business, that as a rule he has been compelled to deal as an individual with forces gigantic in their scope, and which he did not in any way understand.

Let's analyze that for a moment. I used to be a farmer myself. A good many times, when I go thru the burden of the labors I have nowadays, I wish I was back on the farm, feeding the pigs and milking the cows.

The average farmer goes to town with a load of wheat or corn. How does he sell it? He finds there are four or five wheat buyers in the town, representing four or five different concerns that all operate thru the same headquarters. He takes a sample of his wheat in a half-peck measure, and goes to one elevator and asks what the market is. He goes the rounds of three or four elevators, and sells to the man who gives him a shade the best price, which has been fixed by somebody somewhere for the man who sells it, and with the fixing of which the farmer had absolutely nothing to do. The farmer is always going and asking the other fellow what the price is, and then he sells at the price offered. When he buys, he asks what the price is and pays it.

Suppose the man who runs this big department store up here on the corner would be seen this morning walking down the street with a bolt of calico under his arm, and he accosts the first lady whom he meets: "Mrs. Brown, what is the price of calico today?" She doesn't know, so he goes on and meets Mrs. Smith, and asks her the same question. What would happen to that man? Why, his friends would get together and they would have the lunacy commission sit on him immediately, because he had lost all his business sense.

And yet the farmers of this country for a lifetime have permitted combinations which ought to be regulated by the strong arm of governmental authority to fix the prices for them, not only for everything they raise themselves, but for everything they buy, until, by force of necessity, they form just such organizations as that which is represented here today. I am not going to enter into any discussion as to ways and means of stopping that condition at this time; it has nothing to do with the farm loan business; but it shows the utter absurdity of the ordinary methods of business to which the farmer has been compelled to accustom himself by reason of the archaic custom into which we have fallen. It is time to carry those same principles of co-operation into action that lie at the foundation of every business activity.

So when you borrow from the land bank, you don't borrow from the government at all, but from yourselves, because every man who borrows any money from the land bank becomes automatically a stockholder in that bank to the amount of five per cent of his loan. That bank becomes to that extent his institution. It is operated for his benefit. The profits which he is accustomed to paying to outside agencies for handling his farm business for him are cut off at once, and the money stays in his own pocket. The business is operated upon a service charge of only one-half of one per cent. The money is invested in mortgages at the current rates, and the earnings of the mortgages are turned over to him in the annual dividends of the bank. So that his credit, resting upon his industry and ability, and the fundamental security of his land, is to go with the credit of millions of other farmers who are in a like situation, and that mobilized credit is taken down to the money markets of the country, and is offered as the best security that there is in the world, the security of the productive earth, to secure the lowest interest rate that possibly can be secured upon money. That is no idle dream; it is no theory; it is working. Let me tell you how.

The land bank at Omaha was chartered on the 8th day of March, 1917. It was organized on the 27th day of February. It opened its doors on the 1st day of March. We were immediately flooded with a volume of business reaching nearly $10,000,000, from the distressed farmers out in the western part of the district—western Nebraska and Wyoming and South Dakota. This was in what the loan companies call the "outlaw" territory, where, if they loaned any money at all, they could get anywhere from 10 per cent a year to 10 per cent a minute. A condition like that was revealed in a letter from Rapid City, S. D., that I got the other day, where a banking institution, supposed to be reputable, but whose officers ought to be in the penitentiary for life for highway robbery, wrote a letter offering to loan $1,000 on a quarter of land at 10 per cent interest and 12½ per cent commission. We haven't any banks like that in Iowa now, but you did have them when I first came to Iowa, along in the seventies. There seems to be a kind of an unwritten law that the wolves move westward as civilization develops. Of course a thing like that couldn't happen in the Hawkeye state, but I will tell you what a Minneapolis concern did just a little while ago.

Out in Wyoming there is a rancher who has a section of land. I suppose it is worth about $4,000. It is out in the dry-land country, but it will grow wheat and pasture live stock, and he is doing pretty well. He has 680 head of cattle and a dozen horses, plenty of implements, and he is making a good living. The 26th of last February he borrowed $1,000 on that ranch from this Minneapolis loan concern, for five years, at 10 per cent interest. He gave a second mortgage for $244 commission in order to get the loan. Had he gone on thru with that contract, at the end of five years, if he had not been able to pay off that commission mortgage of $244, he would have renewed it and paid another commission of about the same amount, and added them all to the face of the mortgage, and been worse off than he was before.

He discovered after three or four months that it might be possible for him to borrow $1,000 from the Federal Land Bank of Omaha, at 5 per cent, on thirty-six years' time, with which to take up that mortgage. He joined with some of his neighbors in forming a farm loan association, and made his application to us for a loan of $1,000 upon this property. We sent out an appraiser, examined the title, found that it was perfectly good security (our opinion was confirmed by the fact that this very conservative Minneapolis concern had recently loaned $1,000 on the same property), and we sent the man notice that his loan was approved.

Then he began to negotiate with the Minneapolis concern to see if he could get his mortgage released, and on the 17th day of July he got a letter from them which read like this:

"We have your letter of the 9th, in re payment of your loan of $1,000. In answer, would say that this loan has been sold to a client of ours, and he does not wish to release it; but we think we could get him to accept payment if you will pay a bonus of $50 and interest up to date. We received no commission for making the loan, and, in fact, paid out money for expenses in connection with it; so we would expect our commission mortgage of $244 paid in full."

How does that figure out? Interest on his loan at 10 per cent for a little less than five months, $41.66; bonus, $50; commission mortgage of $244; or a total of $335.66 that this man had to pay to get the fingers of the money shark off his throat within five months, or a trifle over 81 per cent a year Shylock was a "piker" compared to this company. That kind of fellows would make Shylock turn over in his grave with envy. That is the sort of thing that the western farmer has been up against; those are the stories which can be duplicated in every experience. Some of you can remember such things which happened in your lifetime when you were pioneers in this state. I have a theory which is not peculiar to myself. I believe that if one of you men, for instance, should sell your farm in Iowa and go out into the sand-hills of western Nebraska, where you can get a big ranch of a thousand acres or more, and two or three hundred acres of nice alfalfa, where you can get the increase which will gradually come with the rise in value of the land, and where the boys have a chance to branch out for themselves, you take with you the same character that you have been a lifetime developing here. All the elements of personal credit which you had acquired at your local bank in Iowa go with you as a transplanted Iowa citizen, who goes two or three hundred miles west, where you can farm just as well and make more money than you could on your high-priced Iowa land. But you immediately find the interest rate doubled on you, because you are in the outlaw territory. There ought to be outlaws made of some of these fellows who have made outlaw territory of that region.

We took that $10,000,000 of business for which we had received loan applications, and had it appraised very carefully by the best men we could find. We found that some of those fellows had put values on their land which were altogether too high. They had subconsciously gotten into their heads the idea of $15 hogs and $14 cattle and $3 wheat, and they thought it was going to last always. It rained last spring, and they thought it was going to rain every spring during all the years to come. We tried to figure the possibilities of getting thru on this, and to lend all the money we could consistently with sound credit and we loaned out there a little over $3,000,000, on the $10,000,000 of applications. Then the mortgages and applications and appraisers' reports were sent down to the treasury department of the United States where they were examined by experts on land values in order to determine whether these were proper security for some farm loan bonds. In the last sixty days, $3,000,000 of bonds resting upon those mortgages have been sold to the shrewdest bankers in financial centers, who don't buy any doubtful security. And when we come to put in along with those the mortgages which we are now getting at the rate of about $1,000,000 a week on these highly improved farms in Nebraska and Iowa and South Dakota, we are going to have a demonstration of the fact that it is possible for the farmers to finance themselves by the use of their joint credit.

It is in a certain sense a government enterprise. It is a bank which has been chartered by the treasury of the United States. It is operated under government supervision and regular government inspection. The government of the United States has invested three-quarters of a million of dollars in the capital stock of the institution which I represent. That money is loaned to this bank and to the farmers by the United States government without any interest charge. In due time this loan will be repaid to the government by a sinking fund composed of a very small percentage of our earnings in the future, and gradually, as this government loan is extinguished the bank will pass into the complete ownership of the farmers who are borrowers. And so when you borrow from this institution of yours, you are simply anticipating the profits which you ordinarily pay in commissions to the loan agent, and the numerous items of expense which you pay at the end of five years from one period to another, and you are leaving that money in your own pockets. The small amount of money which you put into the stock of this institution as one of the requirements for securing a loan is invested for you, as the law requires, in a mortgage just like your own, based upon the same kind of sound and properly examined security, at the same interest rate which you pay upon your own loan, and all the profits which may be derived from the handling of that money are returned to you in annual dividends when the balance sheet is taken off.

Everything has to have a system of organization. I fancy that you have some requirements for membership in this association; you may have a constitution. You undoubtedly have some officers whom you elect at certain specified times; you may have some membership fees. Anything that is worth organizing, that accomplishes anything, demands some system of organization, and so there must be a fundamental unit localized down in the farming community where the farmer lives, whose credit is used as the security for this thing invested, or responsibility to look after his interests. That local unit, the great foundation stone of this whole thing, is what is called a "National Farm Loan Association." That is a co-operative organization composed of ten or more farmers who are eligible to borrow money upon the security of their lands. How do they become eligible? This man who borrows money must be what the law terms an actual farmer; that is to say, he must first hold the title in fee simple to the land, and be capable of executing a mortgage. He must operate that farm himself, either personally or with hired labor, or with the labor of some member or members of his family; or he must have a partnership arrangement with the tenant, by which they jointly share in the profits of that enterprise, upon some form of partnership contract that makes the owner of the land wholly responsible for the payment of the obligation assumed when he executes the mortgage. He does not have to live on the land. I won't more than get thru with this speech before some fellow will tell you that you can't borrow money from this bank unless you live on the farm for thirty-six years. He is the ordinary, common variety of liar. These stories are being industriously spread abroad all over Iowa by the men who are interested in getting a commission on the loans that they are going to negotiate for you in the future. Whenever you hear anything about the great chances that the farmer takes when he borrows money from the land bank, scratch under the skin, and see where the personal interest lies of the fellow that is telling you the story. They will tell you that you can't sell the farm or the mortgage will be foreclosed; there is nothing to that, either. You have to give notice to the land bank. If the man who buys the farm wants to assume the mortgage, he can do so, if he is eligible as a borrower in the beginning. Every possible legal equity that the borrower can have in the holding of his land and the protection of his interest is extended to him under the federal farm loan act precisely as under any other form of law ever passed for the conveyance of real estate.

This local organization must be composed of at least ten men who are eligible as borrowers; men who own land and who are personally responsible for the operation of that land. A retired farmer who lives in town, and whose sons are farming the place, or who has a tenant on the farm, would be eligible. These men form an association and elect their officers precisely as you do, and elect a board of directors to represent them for the current year. Then they send their articles of incorporation to the land bank at Omaha, and a copy of them is forwarded to Washington, and a charter is issued, which makes of this local organization in the community a perpetual legal corporation, with the right to receive members who are satisfactory to you, whom you will recommend as good men to whom to lend money, and to whom you would be willing to lend your money, and whom you want associated with you in this co-operative organization. A loan absolutely can not be made to a man in your community unless he is received as a member of your association, and the loan is recommended by the directors of your association, and the property appraised by an appraisal committee of three selected by the directors of your association from its members. Then an appraiser is sent from the federal land bank to examine this property and make his separate confidential report. When those conditions are complied with, this loan application is passed upon by the executive committee of the directors of the land bank, and the loan is allowed for such amount as their judgment suggests.

There was a statement printed in the Drovers' Journal a few days ago, which is being copied and circulated broadcast, to the effect that the land bank at Omaha has so much business on its hands that the man who files an application for a loan now need not expect to get it under two years. The other day we had an association formed at Clear-field, in Taylor county, Iowa, east of Clarinda a little way. The secretary of the association happened to be a local banker. He got his papers up in pretty good shape; the applications were in perfect form; he had been careful to have them appraised by his loan committee and approved by his board of directors. He came over to see me, and told me he spent about a week getting those thirteen men together. There were six men who wanted their loans on the first day of the following month, in order to meet some options of payment on their mortgages and take them up, and he asked if we could make a special case of it and hurry those thru and take care of those men. We said we would do the best we could. We sent an appraiser over the next day. He appraised the property in about two days, came back, and made his report. We called the executive committee and the board of directors together, and it took us about two hours to grind out those loans and approve them, and those men had their money in nine days from the time we got the papers in the bank at Omaha. They were so pleased about it that they put a little item of commendation in the local paper, and the next day the president of a local trust company in Omaha came down to our office and called our attention to the gross error which had been made as to the time in which we were closing loans. We said it was true, and showed him the papers. "Well," he said: "I have been in the farm loan business for thirty years, and I can't do it."

At the present rate of business, we expect to lend at least $10,000,000 on Iowa farms between now and the second day of March next, for January 1st and March 1st expirations. That is the most conservative estimate we can place upon it. We expect to close all of that business promptly and on time. We are already having papers signed up for March 1st closing, and are bending every effort to give these men the maximum of prompt service. This institution has on its books about $20,000,000 of loan applications, and we are doing a business which from point of efficiency and promptness in service is a revelation to the men who have been in the farm loan business all their lives.

Now, friends, there is a lot of red tape sometimes in governmental affairs, and we think Uncle Sam moves altogether too slowly; but I want to tell you that we have the best government that ever existed on the face of the earth, and that altho it sometimes takes a long time to get Uncle Sam in motion, when he starts he goes thru on the right line. I haven't very much patience with the man who criticises the government of which he is a part. I haven't very much use for the man who sits around on the corner and whittles pine dry goods boxes, and finds fault with the government that he ought to be trying to make better. I haven't any use for slackers or seditionists or traitors, and I want to say to you, my friends, that in the midst of this world cataclysm that we face, when the gulf of infinite despair is staring civilization in the face, and the armies of free men all over the world are battling for human liberty thru all the generations to come, there is no meaner man on the face of the earth, no more despicable slacker or traitor ever lived, than the man who, for the sake of increasing his own bank account, will rob the farmers of this country to the extent of even a fraction of one per cent interest when they are trying to fight the battles of humanity by producing food. If there are any farm loan company representatives in this audience who are figuring on stinging the farmers of Iowa for a commission on their next farm loan renewals, I hope they will take that home and chew it over. I have due regard for the ethics of business. I am a business man and a banker, and I believe in a legitimate and reasonable profit; but I want to say to you that any farm loan institution that tries to take advantage of the necessities of the farmers of America today, and to handicap you in performing your duty to your government, when you, like every other patriotic, loyal American citizen, are fighting the battles of your country and of humanity, just as truly as the man who shoulders a rifle and goes to the trenches, is an ally of the kaiser, and ought to have the iron cross.

(Mr. Odell then gave an eloquent tribute to the enlisted men of this country.)

Now, it so happened, in the providence of God—for there is a God who is over us all—that that thing which human foresight could not anticipate has come to shock the world and that today there rests upon this republic of the western hemisphere the supreme duty of making sure and safe the foundations of human liberty for all the generations of the future; and it so happened also, my friends, in the providence of God, that this perhaps the wisest and best conceived piece of legislation that has ever been engrossed upon the statute books of any nation was established for the financing of the farmers of the present and future generations; and when you have organized in your local communities one of these simple little cooperative farm loan associations, of which we have nearly 250 in the state of Iowa today, you are building greater things than you can possibly conceive. You may do the things which serve your own immediate need to relieve your own personal extremities, to cut off a little bit of excess charge here, a little profit there, to make sure and safe the holding together of that farm for your family against the day when you shall go on to "the borne from which no traveler ever returns," but when you organize that little institution in your community, you are establishing safe and sure the foundations of that community for the boys and girls who will make the farmers of the future in the state of Iowa. Listen a minute:

One hundred and forty-eight years ago, the government of the kingdom of Prussia found itself bankrupt. It was unable to collect its taxes from the land-holding nobility. The lands were all in the hands of the barons, and when the barons were not making war upon their neighbors they were spending their time in riotous living and profligacy. Their estates were being wasted, their tenantry were impoverished, production had fallen to the point where the people were starving; and because the government of Prussia was unable to collect any taxes from these barons, it was faced with the extinction of its royal revenues. King Frederick the Great took up this matter with one of the wisest German financiers of that day, Doctor Fischer, an expert on taxation. He broached the idea of pooling the indebtedness of all these land-holding barons in one lump sum, have them mortgage their lands, individually and collectively, for a period of twenty years agreeing to pay off these mortgages in stipulated annual payments at a low rate of interest so that they could get out of debt, improve their lands, put their people to work, and be able to pay their taxes to the government. The plan was adopted. Frederick the Great furnished $262,000 from his private treasury to finance the institution, and the first landschaft was organized in the province of Silesia. The barons mortgaged their land for enough to pay their debts, their taxes, and to start their tenant farmers to work; they continued to pay their obligations promptly because the government required them to do it; and at the end of twenty years those lands were free from debt, except in some cases where the mortgages were renewed. That institution is doing business today in the same locality, and from that simple beginning grew the great German system of financing agriculture which has developed the agricultural resources of that empire to such a wonderful extent. The reason the German empire is holding at bay today the allied armies of civilization, and that the black cloud of autocracy is threatening the future liberties of the world, is because Germany had foresight enough a century and a half ago to lay broad and deep the foundations for financing her agriculture so that she could build a stable commercial structure, and that is what we are up against. These farm institutions grew so prosperous that when the University of Berlin was founded, the German government borrowed the money to do the first building from the farmers' co-operative banks, which owed their origin to the establishment of the landschaft in Silesia, under the reign of Frederick the Great. It is a good thing we learned the lesson in time to enable our farmers to avail themselves of the benefits of that kind of a system, before we were brought face to face on the battle line with people who are past-masters in the administration of it.

Q. How large a territory do these loan associations cover?

Mr. Odell: We have in the state of Iowa 238 local organizations, either completely formed or in process of organization, which cover almost every county in the state. There are sometimes two or three in a county. We do not wish to have more than one in a given town or community. They sometimes cover the entire county, as, for illustration, the one which we have in Des Moines, which has under its jurisdiction all of Polk county. In Shelby county we have four associations, which have filed applications for loans to the amount of over $800,000.

Q. Who receives this one-half per cent?

Mr. Odell: We have recommended to all of our associations, under the informal recommendation which is made by the Farm Loan Board, that this local association, when it selects its principal business officer, who is termed the secretary-treasurer, shall be paid a compensation fixed at one-half of one per cent of the amount of the loans. This officer need not necessarily be a member of the association or a borrower; he is the only officer of the association who is exempt from the privileges of membership. He may be a local banker, the postmaster, a lawyer, or anybody the board of directors may select. He ought to be a competent business man; he has considerable business to look after. He has to see that the collections of this interest are made and forwarded, and that the money is properly disbursed when it is sent out to the borrowers. He is an official who is under bond. This one-half of one per cent which is authorized is his sole compensation for handling that business, including the maintenance of his office and his clerk hire. The rule stipulates that the borrower shall pay that only once, and when he pays that fee, together with the uniform membership fee of $5.00, which is paid into the incidental fund of the association for incidental expenses, that is all he has to pay for the handling of that loan for the period of thirty-six years. That means the difference to the borrower of saving about six renewals, six commissions, six attorney fees for the examination of his abstract, six different appraisals of his property.

Q. How large an amount is loaned?

Mr. Odell: We are authorized, under the present terms of the law, to loan a maximum sum of $10,000 to one man. We are authorized to loan up to 50 per cent of the appraised value of the land, and if the land is well improved and has good buildings, an additional 20 per cent of the value of the insurable buildings. Practically all of our loans run about the limit of $10,000.

Mr. Wilbur M. Fisk, representing the Federal Marketing Bureau, with headquarters at Omaha, was then introduced, and addressed the convention as follows:

GOVERNMENT MARKET REPORTS.

Mr. Chairman, and Gentlemen of the Convention: What is my good fortune in being able to attend this convention, I am somewhat afraid will prove your misfortune, as I am certain that Mr. Hall, of the Washington office of the Bureau of Markets, whose place on your program I have been asked to take, could have presented to you a broader and clearer statement of the work and plans of the bureau than it is possible for me to do. But urgent official business made it impossible for him to be in attendance at this important meeting.

I shall endeavor to give you briefly an outline of the various phases of the bureau's work on the problems involved in the marketing of live stock and meats, so far as they have been developed. This will be strictly a plain statement of the facts which it is hoped will enable you to judge the value of the work being done, the soundness of the theories upon which it has been based, and the effectiveness with which it has been carried out during the first year of the operation of the field stations thruout the country. And especially is it hoped that, with this statement before you, you will be able to formulate suggestions, recommendations and constructive criticism, which I assure you will be most heartily welcomed and will receive the most serious consideration.

The name of your organization, the Corn Belt Meat Producers' Association, immediately suggests that you are more than ordinarily alert to the nature of your business—that you do not consider yourselves merely as growers of and dealers in cattle, hogs and sheep, but also as producers of a finished article or class of articles, in the marketing as well as the production of which you are very vitally concerned.

At your meeting here last January, Mr. Doty, of our Chicago office, presented a statement of the plans then under consideration for a market news service, covering various lines of information not previously furnished, or at least not in as complete form as seemed to many stockmen to be desirable. He also gave you a summary of the objects stated in the act of congress authorizing this work. To bring these points freshly to mind, I shall repeat in part his statements bearing upon the plans then contemplated which we have since been working upon.

"Funds which were appropriated by congress in the agricultural appropriation bill for the present fiscal year for the purpose of starting a market information service pertaining to live stock and meat, have made it possible for the Department of Agriculture to furnish to stockmen and to live stock markets, and meat trade, current information along lines which organizations of stockmen have recognized as an urgent need. It has been impossible to bring about any improvement in some of the serious conditions which exist, such as violent fluctuations in market prices, and very uneven receipts of live stock at the markets, owing in part at least, to the lack of the necessary information.

The item in the appropriation bill, which has been referred to, is substantially as follows:

"To enable the Secretary of Agriculture to gather from stockmen, live stock associations, state live stock and agricultural boards, common carriers, stock yards, commission firms, live stock exchanges slaughtering and meat-packing companies, and others, information relative to the number of different classes and grades of marketable live stock, especially cattle, hogs and sheep, in the principal live stock feeding districts and growing sections; prices, receipts and shipments of the different classes and grades of cattle, hogs and sheep at live stock market centers; prices of meats, and meat food products, and the amount of such products in storage; to compile and publish such information at such frequent intervals as most effectively to guide producers, consumers and distributors in the sale and purchase of live stock, meats and other animal products, and to gather and publish any related information pertaining to the marketing and distribution of live stock, meats and animal by-products."

To carry out these plans, offices were opened about one year ago at New York, Boston and Philadelphia, with experienced men in charge, to gather information as to the conditions and trend of the dressed meat trade in the great consuming centers of the east, which conditions have an important bearing on the live stock trade on the markets of the west. Offices were also opened, as you know, at Chicago, Omaha and Kansas City, and direct telegraphic connections centering at Washington have put all of these offices, and others since established at St. Paul, Fort Worth, Portland and elsewhere, in closest possible touch with each other, so that it is possible, early each day, to receive and distribute authentic information regarding eastern conditions to the patrons and traders on the western markets. The tendency of this service is to place the grower, shipper, dealer and packer more on an even basis in trading on the markets, and, also, to help shippers who study the reports to decide when conditions for marketing stock are most likely to prove favorable. Realizing that there is yet much opportunity for improvement in this as well as other phases of the market news service, it has been encouraging to have many identified with the live stock industry in various ways inform us that the reports have been distinctly helpful to them, and to receive daily numerous requests from stockmen to be placed on the mailing list.

Yesterday's mail to our Omaha office, for instance, brought in ninety-one requests from stockmen, farmers, bankers and others in Iowa, Nebraska, South Dakota and other states in our territory asking for this and other reports issued from field stations. It is hoped that this service will increase in value as experience tells us more definitely what is needed, and as suggestions from such organizations as yours enables us to perfect it. A weekly summary, with price range daily on each market, now supplements this report.

A second feature of the service, which many stockmen and traders state they are finding helpful, is the daily report of live stock loadings for every stock yards center in the United States. Arrangements have been made by which railroads in all the territory west of the Allegheny mountains report each night at midnight to our Washington office the number of cars of each class of stock loaded on each division, giving also the market destinations. A night clerical force immediately tabulates these figures, and relays them to all field stations at six o'clock central time, every morning of the week. For the principal markets in the west these reports as issued from field stations, show also the number of cars originating in each state every twenty-four hours. The state origins have made it possible for those receiving the reports to keep close tab on the volume of marketing from each state, and especially during the western shipping season have furnished information as to the quantity of range stock moving marketward at any given time.

Once each month since a year ago, the Bureau of Markets has released a report showing the cold storage holdings of various classes of meats, poultry, dairy and other products, with comparisons showing holdings throut the country at corresponding seasons in the past. A very considerable demand has developed also for these reports.

Statistics are also now being released monthly, giving details of the receipts and shipments of all classes of live stock at each stock yards center of the country. Showing is made of the output of stocker and feeder cattle, hogs and sheep.

In line with the purpose of congress to keep the various sections of the country better acquainted as to possible markets for stock, the issuing of a weekly news service has been inaugurated within the past month. Reports will be issued showing where demand exists or develops for any particular class of stock, where the volume and nature of receipts at any time may offer a favorable opportunity to obtain needed feeding stock, and giving any data that may be obtainable which might help the man who has something to sell to do so to advantage, and to help the man who wants to buy something to do so on the basis of information, which it is hoped to make a comprehensive and accurate reflection of conditions thruout the country.

Special projects have been undertaken to accomplish such work in addition to this general news service. Surveys are being made in certain feeding districts, notably the Lancaster region in Pennsylvania, and the Arkansas valley district in Colorado, which will show the quantities of stock being carried in these important areas. It is planned also to extend these surveys where it can be profitably done.

Recently the bureau issued a report, with the assistance of the county agents of various southern states, showing the quantities of cattle that could be carried thru the winter in the different counties, and similar service will be provided from time to time, as opportunity is afforded. I have a few copies of each of these various reports, for distribution to any of you interested, and will gladly mail them regularly on request.

These and other features which may be found possible to develop constitute the present and prospective extent of the market news service on live stock and meats. All persons connected with the Bureau of Markets are anxious to give service that will meet the real needs of the live stock industry, and to that end invite the co-operation and criticism of practical men in the industry, such as constitute the membership of this and similar organizations. I am much indebted to you for this opportunity to present a statement of the work of the bureau, and again assure you of our desire to be of material service to you.

President Sykes at this time announced the following committee on resolutions: J. M. Evvard, H. C. White, Oscar Heline, F. J. Turner, D. W. Anglum, T. C. Cessna, C. K. Thornburg.

Professor W. A Cochel, of the Kansas Agricultural College, then addressed the convention as follows:

THE BREEDING HEIFER.

Mr. Chairman, Members of the Corn Belt Meat Producers' Association, Friends: The present time is a very difficult one for a man who is interested in the production of beef to be called upon to talk to men who are actually producing it. I think there has never been a time when our methods have had to change so rapidly, when we have had so many unexpected things to deal with, and when our cattle feeders as a whole were in such an uncertain frame of mind as they are just at the present moment. I know that is the feeling of our cattle men in Kansas and in the southwest generally, and from what I have been able to glean from the opinion of the men here as expressed this morning, the same spirit seems to prevail among the cattlemen of Iowa. They are up against a new set of conditions, problems which they have not been able to anticipate; so that they hardly know in what direction they shall attempt to move.

There are, however, a few fundamental principles in the production and handling of live stock that go on thru our industry regardless of temporary conditions. The first of these is that we must have the live stock to feed to convert our farm products into beef, and that we should do it in the most efficient manner possible. It has been the history of this country and every other that those communities which have remained in the cattle business in spite of all conditions which might confront them, and of all temptations for them to discontinue, have eventually come out on top; that is, they have become the leading agricultural communities in their states or counties. We have today in this great world war a further illustration of that fact. The countries that are contending for supremacy today are not those which have neglected their live stock industries, but those which in fact and in truth have been known for all time as the leading live stock countries of the world. Food is one of the most important factors in the winning of this war, and those countries which are best able to feed their armies, which are producing the most crops per man or per acre or per any other unit, are the ones which will eventually win. If we go out in any direction from Des Moines, or any other city or town in this part of the country, and pass a large number of farms, we find that the same thing applies to the individual farm that applies to the country or nation as a whole, i. e., that those farms which have been continually devoted to the production of live stock stand out alone as the most productive, most profitable, best improved farms which we have in our communities.

The cattle business, fortunately, has not rested entirely upon the immediate profits which we have secured from the feeding of our cattle or from the conversion of our farm grain feeds into beef. There are other profits which enter into it that we are not able to measure at the moment but which in the end usually amount to considerably more than the primary profits from the industry itself. The first of these, probably, which is so well known, is that live stock farming of course increases or improves the fertility of the soil and increases the yield of crops per acre. A few years ago, when I was connected with the Indiana experiment station, we made a sort of an office census of that entire state. We found that on an average the farms in Indiana at that time which were devoted to the production of beef were worth 40 per cent more than the average farms of the state. We found that while the average yield of corn in the state for the ten-year period which was under investigation was 32 bushels per acre, the average yield of corn on the cattle farms of the state was slightly over 50 bushels during the same period. It is these secondary products in the handling of live stock which keep us in the business at times when we are very much tempted to temporarily discontinue our ordinary work.

Just at the present time we have another factor which I think is probably, from a live stock standpoint, the most critical one that we will have to consider in the very near future, and that is the tremendous impetus that is being given to the production of wheat, corn and other cereals, in order that we may win the war. There is no one, of course, but feels that it is necessary for us to take any move that may be called for in order to feed our people and the allies; but in the end the production of live stock in this or any other country will to a very large extent absolutely depend upon the amount of grazing land which we have left upon which to develop our breeding herds thruout the summer season. We have not yet reached the stage in the development of our agriculture where we are producing cattle in any large way during the crop-growing season on anything other than grass, and whenever the production of wheat is stimulated to such an extent, as it has been in our state, that lands which are better adapted to the grazing of live stock than to any other purpose, are broken up, in the hope that we may get one or possibly two crops of wheat, due to the favorable situation under which we are operating at the present time, it means that we are reducing our possibilities in live stock production to that extent.

As agricultural colleges and as experiment stations we have given less attention to pastures—to grass, which is the leading crop that we grow thruout the entire United States—than we have to any other crop that is grown on the farm; and grass is the primary and fundamental basis upon which our live stock industry rests and must always rest. Now we are working to some extent in various sections of the country on this problem of increasing the productive capacity of our grazing lands, of our hay and forage crops, and those things, of course, we will have to give more attention to in the near future than we ever have before, because of the fact that we will have less grazing land upon which to produce our live stock than we have had in the past, and we must maintain our present supply and increase it to what ever extent is necessary by making those grass lands and those meadows more efficient which we are now using in the production of beef.

If we can in any way increase the production of our pastures so that the cattle will take a smaller acreage than we are now using, we have increased the efficiency to that extent. On the other hand, if the federal farm loans will enable us to hold and manage grazing lands at a lower rate of interest than we are now paying, it simply means that we can invest more in our grazing lands per head. But, however that may be, we find that the conditions are practically the same in every section of the country where breeding herds are handled under similar conditions.

Last summer I was fortunate enough to take a trip thru a large proportion of the cattle-producing sections of the country, and I found that in our state, where we allow from four to five acres of land to graze a steer thruout the entire year, our grazing lands were valued at from $35 to $40 per acre. I found that in those sections of the state where we were allowing ten acres of land, the value of that land was estimated at approximately $15 per acre. I went down into southern Texas, where they allowed forty acres of land to graze an animal, and found that their investment in the acreage necessary to graze an animal was approximately the same. In Montana, on my return trip, I found that they were allowing twelve and one-half acres in that particular section of the state where I made inquiry, and they valued that land at $12 per acre.

At the present time, the beef cattle industry seems to be based upon approximately $150 valuation in the grazing land that is necessary to carry an animal thru the grazing season. If the grazing land in your state is worth more than that, it simply means that in the production of beef-producing animals you are either competing at an unfair advantage, or you have another advantage in producing other crops more economically for wintering purposes than can be done in those sections where grazing is the main industry. But we all assume that, regardless of present conditions, as our population increases and our country develops, it will be necessary for us to increase the production of live stock proportionately, or at any rate, in some proportion. There are other ways in which we will have to do it than by maintaining as large an area of our land in grass, and that will come to a very large extent from supplementing our pastures thru those seasons of the year when we are apt to have a very great deficiency in the food supply.

We find, for instance, on our college farm, where we are grazing about 1,000 head of live stock, that we can reduce the acreage per head at least one-half one year with another, as compared with the average in the state, by providing supplementary feeds for the various short periods of the year when we are apt to be affected by absence of rainfall, and that is a condition which can be utilized to a very large extent in practically any other section of the country. The seasons are not all alike, but as our grazing industry is managed today, we have to allow, as a general rule, under practical conditions, a sufficient amount of land to take care of our cattle regardless of weather conditions or anything else. So that by being able to supplement our pastures thru a very short period of time, we are able to reduce the acreage per head, and to reduce the interest on the investment in land necessary to carry our animals thru the grazing season.

We have also another problem which is confronting our Kansas cattlemen, which I think is to a very large extent a local condition, tho from what Professor Evvard said this morning, it may not be entirely so. This winter we are up against the proposition of paying from $28 to $34 a ton for alfalfa hay, to be utilized in the wintering of our breeding stock. This is an unusual condition for the Kansas farmer, who has heretofore considered from $12 to $15 a maximum price for his hay. So that the crops which we usually use in the maintenance of our breeding herds have increased approximately 100 per cent in value, which means that a great many men do not have a sufficient amount of nerve, or have too much judgment, or whatever way you want to put it, to try to winter the same number of cattle this year that they have wintered heretofore.

The men who are producing stockers and feeders can easily stay out of the game for a short period of time, or someone else may absorb the steers which they would normally handle, and feed them in some other section of the country. But the one thing which is notable in regard to the development of the breeding industry is that it necessarily stays with the land thru a long series of years. We can't get into the game of breeding beef cattle and do it profitably, consistently and economically, in less than five years. It takes about five years from the time a man really starts to handle a breeding herd until he begins to market the normal offspring from those cattle; so that any temporary condition which interferes with the maintenance of our breeding herd or with the proposed increase in production for a temporary period has a much greater effect than the immediate one, in that it delays the progress of improvement, or delays the plans of the men who are engaged in the industry for a considerably longer period of time than would be indicated by the temporary conditions.

We are attempting in our state to solve that to a very large extent by the more complete utilization of other feeds this year than we have ever utilized before. We are cutting up our corn this year to as large an extent as the labor situation will permit us. I think we will find that during the present year we have fed twice as much fodder from the shock in Kansas as we ever fed in a similar period before. We have made a little attempt to use wheat straw, which we have heretofore considered almost a waste product. I would judge that probably one-third of all the straw produced in the state has been burned immediately after threshing, but this year it was the exception rather than the rule to find anyone who was wasting any straw, and we are using that to winter our breeding herds.

In other words, we are trying to come down to one fundamental fact, that our beef-breeding herds, our young, growing animals, should to a very large extent be produced on the by-products of the farm rather than the main products, and I don't know but what the lesson which our Kansas cattlemen are learning in the development of their breeding herds or the preservation of them this year will result in a permanent benefit to them in the economical production of beef in the future. We have heretofore considered that alfalfa and corn were the two main sources of food nutrients to be converted into beef. This year we are learning that the by-products of our corn and wheat have a value which we never dreamed of before. We are also building and filling more silos than ever before. We have found that the corn which goes into the silo will carry a tremendous number of breeding animals thru the year as compared with that which is fed in the form of stover.

That brings up one point that I want to mention this afternoon in the development of a breeding herd of heifers, and that is that eventually the beef cattle industry will be localized in those sections of the country where the by-products of the primary crops which we grow on the farm have the most feeding value. Instead of converting corn into beef, as we have so extravagantly done in the past, we will make a greater attempt to utilize other things as substitutes for corn, and probably produce beef that is almost if not quite as good as that which we have formerly made.

The only men in our state who are complaining at the present time of the cattle situation are those who put cattle on full feed early in the year, with the intention of marketing them at the present time. Those who have made the average, ordinary grades of beef, who have depended upon grass-fed cattle as their source of income, or upon the handling of cattle that had an outlet as feeders, have no criticism; but those men who have full-fed their cattle and have tried to make the very best grade of beef are not in the most happy frame of mind at the present time. The only thing that seems to save them at all this year is the fact that the hogs which they have fed in connection with the cattle have taken care of a considerable proportion of the feed bill.

Now, in the development of a breeding herd, we have two or three things to consider. In the first place, we have the kind of stock—the efficiency of the animal itself—which must be taken into consideration, and that, of course, is being improved from day to day. We are finding, for instance, in our section of the country, that our farmers are feeding and breeding and producing a better grade of cattle than they have ever produced in our sections of the country heretofore. I don't know whether that is quite so true in sections where the cattle industry is not the dominant industry, but in those sections of our state that are known as cattle-producing sections, we find that there has been a tremendous improvement in the quality of the type and in the efficiency of the animals that we have produced.

We are getting our cattle to market at a younger age than we have ever done heretofore. In our state it has been customary in the past for us to handle four-year-old cattle almost exclusively. Last year we found that we had to take three-year-old steers instead of four-year-olds, because of the fact that the four-year-old steer was no longer available. This year we find that there is practically another year eliminated from the age of the cattle which are going into our feed lots for wintering, with the intention of grazing them next summer, and the majority of our graziers are having to stock up with two-year-old steers to utilize the grass next summer.

This is a condition which I think is general thruout the whole cattle country. If we study it a little more carefully, we find that it is probably a logical sort of a situation. Those of us who have been in the cattle and hog game all of our lives know that formerly it was our custom to market hogs at very much heavier weights than we are now doing As a boy, I remember that we did not think a hog was hardly fit to eat until he was nearly a year old. We did not think of putting him on the market before he was a year old. We have gradually reduced the age, with but slight reduction in the weight of the animal, until today it is the exception rather than the rule for a hog to go to market after he is a year old. The same thing has occurred in the handling of the sheep and lambs on the market. My earliest recollection of sheep feeding was that we never attempted to feed anything but wethers. Once in a while we would get a load of yearling wethers, but we never attempted to feed lambs.

The same tendency is being shown in the production of our breeding cattle. We are gradually reducing the age, and that means that we must gradually, or even more rapidly, change our methods of feeding, because of the fact that we cannot profitably produce a young growing animal and get it fat with the same sort of treatment and care that we could the more mature animal. It means that the man who changes his methods and prepares to meet the new situation is going to stay in the cattle business the longest, and the man who stands up and states that he is going to continue the same method that he has always practiced in the production of beef will be the man who will of necessity have to drop out in the future, unless he has a tremendous bank account to back him up.

There is one thing in this connection that I have often stated—and I think it is pretty much of a fact—namely, that the handling of cattle is not always based upon judgment. A man goes into the cattle industry. He likes to increase his operations; he wants to stay in that particular industry. The cattlemen are the most optimistic, at the time they put in their cattle, of any group of men that I have ever seen, and it almost becomes a disease in the feeding of cattle from one year to another—they carry it thru life. That means that frequently they will stock up with cattle at a time when their better judgment indicates that it might be a good time to stay out of the business. But in the end we find that our cattle furnish us a market for the feeds which we have produced on our farms, and thru a series of years they furnish us the best market that we can get for the feeds that we grow on the average farm in the grass and corn belt of the country, and that means that, as a general rule, the losses in bad seasons do not quite overbalance the profits in the good seasons, which keep a man encouraged and going thruout the entire span of his existence.

The most dangerous situation which we have to confront in our country is years of inordinate profits. More of our cattlemen in Kansas have gone broke because of prosperity than for any other reason. We find, for instance, that once in a great while we will have a season when we will clean up from $20 to $30 per head in grazing our cattle thru the grazing season; and the next year every man who has had that sort of experience wants to double his profits, and he takes a loss on two or three times as many as he had formerly taken a profit on, which means that thru a series of years that man goes out of business. But our most successful farmers—and I think this will apply to the farmers of Missouri Iowa, Kansas, or any other state—are the men who have gone into the cattle business conservatively; who have limited the number of cattle they handle to approximately the amount of feed that they produce on their farms, and have continued to handle approximately the same number of cattle one year with another, and in that way have furnished themselves with the very best possible outlet for the feed they have produced.

They have built up the fertility of their soil, grown more corn and alfalfa per acre, and in that way have been able to obtain the average normal profit thru a series of years.

To come back to the question of the breeding heifer, there is no doubt but that, as our corn and wheat and hay advance in price, as they have during the past year, there is an incentive given to a large number of men to discontinue the maintenance of breeding herds of beef cattle; that is, when all the factors that enter into their production have increased, and the prices of the cattle have not increased proportionately, it means that there is the greatest sort of an incentive given to them to reduce rather than to increase production. But we have this to think about at the present time. In the past, when such a situation has been met, there has always been some other section of the country where cattle could be produced cheaply. But we have gotten up to the point today in the United States where we no longer have any cheap lands in any section upon which to produce beef cattle. It means that if we go out of the business in one section of the country, we simply reduce the supply to that extent, and that, of course, will eventually mean that those men who are able to stay in the business will reap their profits from the handling of their herds.

In our experimental work during the past two or three years, we have been working on the problem of the development of breeding cattle. It is customary in the cattle section of the country to breed heifers when they are two years of age, to calve at three. We have been working on the problem of the maintenance of our breeding cattle in such condition that we can add at least one year to their active life of reproducing for market purposes; and by taking a group of heifer calves, feeding them well the first winter, mating them the spring after they are a year old, and wintering them well the second winter, we can raise very nearly as good a calf from a two-year-old heifer as we formerly have been able to raise from a three-year-old heifer handled under ordinary range and grass conditions. Not only that, but we have found that we have had a larger percentage of the heifers prove to be breeders thru a series of years by handling them that way, and we have found that a larger percentage of them become good mothers than has been customary when we have allowed them to go until they were more nearly mature before reproducing.

But this means, in our section of the country, that they must have better treatment than we have been giving them; we must give them better care during their first and second winters, in order to keep them growing steadily from the time they are born until they finally go to market. In that way we find that the cows which we eliminate from the breeding herd each year will usually pay for the cost of filling up the herd thru the younger stock that we have grown. So we do not have such a tremendous charge to place against our herds as we have formerly had where we only saved a few calves every four or five years, and every now and then had a lot of canners or shelly cows to eliminate from the breeding herd and to replace with the younger animals. So that, taking everything into consideration, in our section of the country we find that the men who have been breeding cattle, handling them economically and feeding out the produce of their own herds, are the ones who have not had to take a loss at any time during the past five years in the handling of beef cattle. We can't say that in regard to any other group of men who have handled cattle. At times we have had a few of them who have made inordinate profits; at other times we find that the speculative instinct has run so rampant among them that they have given more for their feeding cattle than the fat cattle were worth when they finally went to market. So we have urged cattlemen to increase their breeding herds and feed out the cattle of their own produce rather than depend entirely upon going to the market and getting a bunch of steers feeding them over a short period of time, paying two or three commissions and freight bills, and taking all the risks incidental to the handling of cattle on the market.

That, of course, is limited to those sections of the country where grazing is possible. I know that there are places in Iowa (some people will disagree with this statement, but I feel that I know) where the land is so valuable that you can hardly afford to keep it in grass, and under such circumstances you are forced, in order to stay in the cattle business at all, to depend upon somebody else producing them where they can be produced more cheaply. But whether you are handling a breeding herd or fat cattle, the same principles are involved, namely, that cattle are primarily intended to furnish a market for the products grown on the farm. If you are growing grass and roughage to a large extent, the thing to do is to produce cattle that can use it, and that means the breeding herd.

You have another advantage in this section of the country, where feed is plentiful and lower than in the grazing section of the country. The breeding herds that have made a name for themselves are those raised where feed is most abundant and where transportation facilities are such as to enable buyers to get to the place where they were produced. Iowa producers have all these advantages.

So I might sum up what I have to say this afternoon in a very few words. The beef cattle industry has always been the basis upon which a permanent, prosperous system of agriculture has been founded. Every country, every state, that has eliminated cattle from its system of farming has at the same time reduced its proportion of other agricultural products. The most prosperous sections of America today are those farming sections where live stock and cattle are most abundant. We find that there is always a spirit of unrest among men who produce only one crop, whether it is corn or wheat or cotton; and one of the chief advantages in the handling of cattle in this or any other state is that it encourages and almost forces the production of a variety of crops. It distributes labor thruout the entire year, which enables the cattleman to hire the very best labor that is available in his community, and makes him a much more efficient party. Then, in addition to that, it increases the yield of all other crops because of the fact that you keep live stock on the land; and, finally, it makes, as a general rule, a better class of citizens. We find that our live stock in Iowa, Kansas, Illinois, or any other state, are the ones upon whom the government is depending today for advice, for counsel, and for the increased production of all the things which we need in an agricultural way; and we find that in our section of the country especially the men who have been successful in cattle have been successful in almost any line of business they have taken up, and hence are considered and generally looked upon as the most enterprising citizens in our state. Whether the live stock industry develops it or whether it takes that type of man to stay in the business I am unable to say, but the two go together.

At the present prices in our country, it seems that it is up to us to use every bit of information we have, to make every possible effort that we are able to make, to increase the production of beef and other meats to the fullest extent that our lands and our feeds will permit. It is not the time, above all times, for us to look entirely at the profit side of the ledger. It is up to us to produce beef during the next three or four years, or during the duration of this war, whether it is profitable to do so or not; we have that duty thrust upon us We all feel and hope that the price of beef will be adequate to overcome all of the elements that enter into the cost of production; but, regardless of anything else, the most important thing that we have today is to feed our army and to feed those people who are depending upon our army; and it can't be done if any of us become discouraged because of the probable things that may happen in the future. I am telling our Kansas farmers—and the most of them are acting upon this sort of suggestion—that it is the time for us to continue our operations in the handling of cattle just as nearly under normal conditions as we can; to do nothing that we would not do were the conditions different; but for those men who had been in the habit of feeding cattle for years to continue in the same way they have, and to attempt to increase the production of beef more than we have ever increased it before. That is the situation which confronts us; it is the thing which we feel it is necessary for us to do; and I can not help but feel that the same factors which have entered into the increase in the price of beef in recent years will have the same influence, namely, the cost of feed, labor and production. If we study the situation carefully, we find that beef is the only product of the farm that has shown a constant and gradual increase in values ever since we have been keeping agricultural statistics in this country. There is not a period of five years in the last fifty years but what the average price of beef has increased over the average price of beef in the preceding five years. There is not another crop which we produce, of corn or wheat or any other product of the farm, which has that sort of a record, so the only way we can judge the future is by the past. So it seems that with the tremendous increase in the value of everything that has entered into the profitable production of beef at the present time, eventually, if not immediately the price of beef must advance proportionately.

Now, with these things of course we have other factors over which we have no control. Our farmers seem to feel that the labor situation with them is probably the limiting factor in their production next year. We have had a greater dispersal of breeding herds in our state because of the inability to secure men who are competent to feed and care for them than from any other one cause, and to my notion, probably the most serious thing that confronts the beef cattle industry in the west and south is the inability to secure men of experience and training and skill necessary for us to have in order that we may keep our production up to normal. We are working on that problem; we are doing everything in the world we can to encourage the men who are capable of staying in that particular line of business, because of the fact that we feel that it is absolutely essential.

On the other hand, we also feel that it will be profitable thru a series of years, for us to encourage men to handle all of the live stock that we can handle in our state, because of the fact that it has always been in the past the most profitable system of farming that we could develop, altho we are changing gradually from the speculative handling of beef cattle to the production basis, because of the fact that we have been finding it more profitable to produce cattle than to do anything else with them.

I can not help but feel that this production of beef will in the end supplant the finishing of beef, or the speculation which has been the one determining factor in the development of our agriculture in the United States. As I said a few minutes ago, we are not expecting to reap immediately all the profits we get in the handling of beef, but we are going to develop a well-arranged, permanent, profitable system of agriculture because of the fact that we have been so closely and intimately identified with the system.

J. A. Gunn: Do you know of anyone who is using corn silage made from the stalks of the corn, taking out the ears, for wintering the beef cows?

Professor Cochel: We are doing it ourselves. We have just finished building a silo yesterday, and have filled one silo with chopped fodder. We husked the corn and put up the fodder in the field just as if we were going to haul it out later and feed it, but instead of doing that put it into the silo.

Mr. Gunn: How do the cows like it?

Professor Cochel: They don't like it quite as well as silage with corn in it, but we have wintered cattle on that sort of stuff, giving them one pound of linseed or cottonseed meal per day per head, and a little wheat straw in connection with it, all of which are very cheap feeds, and have had them go thru the winter without losing in weight. We took them off the pasture about the middle of November, and carried them thru the winter on that feed. It is a little bit expensive to husk corn and haul the fodder to the silo.

Mr. Gunn: Did you know that there are several machines that husk the corn and put it into the silo?

Professor Cochel: I have heard of them, but they have not gotten out our way. Our farmers who are practicing that are to a very large extent men who do not have silo capacity sufficient to feed all their cattle thru the winter, and they fill their silos two or three times.

The president announced that the election of directors from the even-numbered districts for the ensuing year would take place after the banquet in the evening.

The President. I now have the pleasure of introducing to you Mr. Joseph P. Cotton, of Chicago, chief of the Meat Division of the Food Administration, who will now address you.

THE STOCKMAN AND THE FOOD ADMINISTRATION.

I came out here to see you, and my trip is of very little use if it merely consists in your seeing and listening to me. I want to have a conference with you, and to get something from you, too.

I suppose the first thing for me to do is to tell you more or less of what my job is—what I have been doing and why I have been doing it. I will be as brief as I can on that.

In the first place, a Food Administration—this one or any other—is a pure war bureau. It has no other objects or purposes except as a war instrument, and its work is essentially two-fold: First, to see that the food is produced, and, second, to see that that food goes to the consumer and is distributed as cheaply as may be. If we fail in the production of the food, we can never get over that failure.

One or two other generalities. With the withdrawal of a large number of men from the productive industry, and with the spending of very large sums of money on war, there has come what we all know as the high cost of living, that is, an unprecedented demand for food and meat stuffs, and unprecedentedly high prices. No man, no government, is strong enough to just turn the clock back and put back the prices to where they were before the war, and any government or food administration, or anybody else who tries it, will simply fail and be broken. It can't be done, and we are not trying to do it. What the Food Administration is trying to do is to see that the food is produced, that the profit made on it is a reasonable profit, that after it is produced it goes to the manufacturer or distributer, and that he operates on a reasonable profit, and that it goes to the consumer with no other profits but these reasonable ones. That means eliminating just as far as possible speculative profits and profits that come from hoarding and other unfair methods—and those profits we all know have been pretty big.

So much for a general statement. Now about my job. The first end of it was to look after the packers. You know them probably better than I do During the war the packers have had profits that arose not only from manufacture, but from the fact that they bought a hog, we will say, at one price, and before they sold it it had gone up; that is, they took the speculative rise. Much of their profits in the last two years have been made in that way. After studying that over, I limited their profits. I made a different rule for the big ones than for the little ones, because I thought it was a good thing to do, and, generally speaking, because I thought the big ones ran less risk than the small ones. I don't expect or ask anybody to agree with me in that profit I gave them; but I gave them what I thought they could live on and expand on enough to do a job that has to be done. I don't mean to get into a scrap with them, but I do mean that they shall work for the nation in this war—and they are going to. Let's not fool ourselves on the amount of money that goes to the packer, for whatever his profits and whatever he gets in his best years do not mean a very big slice of the cost of meats when the consumer gets them.

Then, in order to save those savings for the consumer, there is a second step in the work, and that is one of the things I am trying to do now—to see that the retailer does not do too much in the way of profiteering. The retailer, speaking generally, like the rest of us, has been getting all he could. As meats went up, he held his retail stuff at pretty high prices, and he did not lower them when meats went down. But the retailer as a class is not getting so very rich. There may be too many of them, or they may be doing the business badly. The service I can do in regard to the retailers I think is this: No man or set of men can go out and watch every retailer in the United States; but we control the packers pretty thoroly, and if any locality working with the local food administration tells me that a retailer is making an unfair profit, we can blacklist him and forbid the packers to sell him goods.

Now about your end of the game—the production end of it. I am not a live stock man. Maybe they ought to have picked out one for my place; maybe they ought to have picked out a packer to regulate the packers. I am not sure that would have been wise. Anyway, this is what we did. I called in some advice on the producing end of it, and among those advisers two have spoken here today: Mr. Evvard and Mr. Cochel. Another man whom I consulted from the beginning was Mr. Wallace, of this city. I don't want to give a false impression on that, either. I don't mean that those men are one bit responsible for what I have done; they have not been; I am merely saying that I have asked advice from them. On the whole, it has been good advice, and some of it I have followed, but not altogether, and I don't want to try to get back of those men. I took advice from the packers also.

The first thing I took up was the hog situation, because there was pretty clearly and definitely a hog shortage. On that I made a statement that some of you have seen, fixing a minimum that I thought I could make the packers continue to pay on hogs, and fixing a corn ratio that I think is all right. I don't say that I think I am the boy that can stop the law of supply and demand; I am not; but I have centered in my hand—and it is my hand because it happened to be the only one around —the buying of the meats for the army and navy, and particularly for the allies. All the meats and pork that the allied armies or the allied civilian population get have to be bought thru me, and you can't get an export license to export meat, or freight space to take it over, unless it is bought at a fixed price. I say that simply to emphasize that I have some ability to make good what I say about pork, because pork is the big export that the allies get from us much greater than beef. You can see right away what that is. The stuff will keep; it does not require refrigerating freight space as the beef does.

When I am thru, I want you, if you will, to give me your ideas as to that program of hogs and how it is working, whether or not it was silly, and whether it is likely to take care of the situation. I am not trying to get you to back it; the time is gone for that; I am trying to find out whether it is wise or silly.

Now, on beef I haven't had any such policy as that. We all know the difficulty of any attempt to standardize beef. But it is absolutely true that it doesn t do any good to fix minimums on pork and to help the pork price if we are going to bust the Iowa farmers on the beef; and it is absolutely essential, from the point of view of the Food Administration, that the stock game go on successfully in Iowa. That does not necessarily mean that every man who bought feeders at any price won't show a loss, but it does mean that the industry shall go on, and so far as I have power it is going to be exerted that it shall go on. Of course the Food Administration wants every bit of hog meat that it can possibly get—more meat on the hogs, and more pigs. Of course it wants beef for this year and for all the time. And without regard to this year, I think it is pretty clear that any man who can stay in the beef game will in the long run be the gainer. It is absolutely true that the European stocks are very much decreased, and it is further true that England today is deliberately adopting a policy of lessening her stocks so as to feed her people grain direct. It is of course true that these markets vary, speaking generally, according to the law of supply and demand, and the people will eat more beef when it is low than when it is high, and there is a limit to the amount that can be killed and put into storage; so no man can make remarks that are very good to bank on as to what the definite course of the market is going to be in dollars. I do think, tho, that it is very clear that many of the beef men have been watching the market pretty closely for a long while, and I also think that you have a duty in time of war to go ahead and grow your cattle—not without regard to the market price, but without attempting to catch the top. I think a fellow who is doing his entire job here would be growing and feeding his cattle, using sense, keeping to the market as long as he reasonably could, and sending them when they are right. Don't think because I state those duties simply and clearly that I think they are easy. As has been said here, it is perfectly clear that you have difficulties with labor and feed; don't think I never heard of those. They are not easy to cope with, and they have got to be coped with. I haven t talked particularly about any question of patriotism here, because I don't think it is in the least necessary; I don t think that is the question at all. It is pretty clear that the farmers of the United States did not begin the war, and it is also pretty clear to my mind that they are going to end it.

Of course, beef that goes abroad is all frozen or canned stuff. Great Britian is accustomed, so far as she has a preference, to the Argentine beef, which is considerably heavier in weight. There has not been a normal amount shipped, but that is practically in the hands of the administration; they can take just about what we tell them to take. In the army and navy they have been paying different prices for different grades, but they have not settled down to a standard specification. The last time I was in Washington that was the subject of debate.

The packers are not guaranteed a profit, but I think they will get the profit that I allow them. I just want to be clear on that. Generally speaking, it is to the advantage of a packer to buy his stuff cheap, and I think he will always try to buy it cheap, other things being equal. They are enormous borrowers of money, and they want to keep those borrowings down; and also on the cheaper price the consumers' market is more active. I think the price can be aided by this division, and that we can effect new outlets of supply by export. If I could get refrigerator space I could double the amount Great Britain takes. But nobody can help a glut if everybody in the corn belt piles in cattle. There is a big need of as much co-operation in marketing as we can reasonably get. If the cattle are kept from the panic sales, and marketing goes on as usual, I think we can do some good, but the government can't prevent a bottomless pit if everybody in Iowa dumps his cattle at once.

THE BANQUET.

On Tuesday evening, at 6:30, was held the annual banquet of the association, covers for 200 being laid in the Parrot Room of the Savery Hotel. After discussion of the viands (which this year included turkey in place of the usual choice cuts of beef, Tuesday being Meatless Day), an informal program of speeches occupied the attention of the guests for a couple of hours, Secretary Wallace presiding as toastmaster. A somewhat abbreviated report of the addresses follows:

The Toastmaster: Ladies and Gentlemen: I don't need to tell you how glad Mr. Sykes and I are that so many have attended this meeting. I don't know as we have any particular right to say that, because we have no more right to welcome you than you have to welcome yourselves or us; but it is a great pleasure to us to see so large an attendance, considering the unfavorable weather. We are particularly glad to have so many of the ladies with us tonight. Last year was the first time we had ladies at our banquet, and I think it was about the best one we ever had. We had hoped to have even more of them present this year, and I think we would if it had not been for the unusual cold.

One of the first observers of our association in the years gone by, when those who were not members of it watched our development with kindly eye and helped us from time to time as they had opportunity, has not been with us for some time past. I think he got some real benefit from his associations with us in earlier years; I know I heard complimentary remarks on his editorials during that period. I think we were of real service to him, while he added to our own pleasure very much. And so I asked Mr. Harvey Ingham, of the Register and Tribune, to come tonight and to once more get next to the real people of the state, renew his allegiance, and get such inspiration as I think we can give him. We will hear from him at this time.

Mr. Ingham: Mr. Chairman, Ladies and Gentlemen: I can assure you that it is with very great pleasure that I came back, after some years, to this meeting of the stock growers of the state. You know there are a great many of these organizations that start out with great enthusiasm but do not last, and it is highly interesting to see an organization of this kind that becomes a permanent factor in the situation and grows as the years go on. I want to particularly congratulate this association on this account, because its business is one that goes to the very heart of the proposition before the world today.

You have been coming to Des Moines off and on for fourteen years. Every time you come, you notice an improvement in the city—that more is being done in a public way. What is the secret of that development?

Des Moines was made up originally of thirteen separate towns, with a river dividing them—"Uncle Dick" Clarkson used to call it "the river of dividing strife." A few years ago, a body of young men undertook to get the people of this city to work together, and since that effort began, the city has spent over two million dollars on the river front. Five magnificent bridges have been built—really more than we need. The river has been changed into a real bond of union; it is the civic center and ornamental part of the city. In those ten years, by cooperative effort, we have done away with the divisions of the city, and we have all the people interested in those things that are of interest to all the people. Des Moines would not have gotten this camp up here away from cities like Minneapolis and Omaha, except for the prompt work of the citizens of Des Moines; and we would not have gotten the contract to build it except for that very reason.

Now, what we have done here in Des Moines is to eliminate lines of division, and that is what seems to me all organized effort is teaching. If you stop to think of it, what is the great American experiment? It is that we have eliminated dividing lines; there are no boundary lines on this western continent. You are never conscious when you cross a line from one county or state into another. Sir James MacDonald said, in an address at the Grant Club, that the three-thousand-mile boundary between Canada and the United States without a single soldier guarding it, was the greatest achievement in the western world. We have eliminated in this great territory—very much larger than Europe outside of Russia—all boundary lines and all lines of division. The people of every race live in this country. Nearly all of them are represented at these tables, and all of them are working together in this great western world.

What are you conscious of the minute you look at Europe? Dividing lines—all the emphasis put on boundaries. The whole quarrel in Europe, or a large part of it, is over boundaries, and that has been the history of Europe from the beginning. It seems to me that the message of America to Europe is to abandon those divisions, because that is the only possible foundation for an enduring civilization in the world. Every rivalry that is represented in Europe is represented in any gathering of American citizens; there are conflicts of interest; and yet, as Americans, we can come together in the large things that are of importance to us all. We contend for our interests in the things upon which we differ, but we do not allow them to stand in the way of great accomplishments, and that is what an organization like this stands for. You differ among yourselves as to what your own private interests are, and yet you can come here on the large things that affect you all, and the result is that you make yourselves felt. I am not able to recount all that you have done, but you know that you have done an enormous amount of good. The more of such organizations we have, and the more we emphasize this agreement upon things that interest us all, the more we are solving the great world problems, the more we are going to make foundation for an enduring civilization in the world. And so we have a little training school in this association, and other training schools in the commercial clubs of the state, and in all the organizations that bring us together for the larger purposes in which we are interested.

Now there are certain things at home that we must do for ourselves; there are still lines of division in America that must be eliminated. I think there is too much of a line of division between town and country, between what may be called the farming population and the town population. If you stop to think of it, the only resource of a state like Iowa is the rural homes. Our towns brag on their industries and their factories, but what is Iowa if the rural home is not a success? We have no great mines or forests or commercial interests or shipping. You take away the rural home from Iowa and there is nothing left of a city like Des Moines. And yet you will find that that is not very much appreciated in the cities and trading centers. I am very well satisfied that the boys who are going to inherit these fine farms that you have earned, and who are going to have plenty of money to live where they choose, will not continue to live on the farms unless they are as attractive to them as any other place. They are going to California or Florida, or wherever they want to, unless the rural life of Iowa is attractive; and that is a much more serious problem than we sometimes think it is. Fifty-one per cent of the men on Iowa farms are now renters, and most of them are on short-time leases. There isn't a man here but knows what that means to the soil of Iowa.

There are two or three conditions that must be met. One is that you must have just as good schools for the boys and girls in the country as we have in town. Men will not stay in the country unless their children secure the advantages that they can get elsewhere. On the other hand, thousands of men would be glad to live out five or ten miles from town, and raise their families under rural conditions, if they could have the social conditions in the country that they find in the towns and cities. Nearly every man I ever met who left the farm gave as his reason that he wanted to give his children school advantages. We are solving this problem somewhat with these consolidated schools, but we are far behind other states in that respect.

I myself believe that we must have more good roads. Fifty years ago we devoted all our energies to securing the transcontinental railroads, and every one of them that passes thru our state is of enormous value to it; but the wagon road is infinitely more important to the state than the railroad. The prosperous towns are going to be on the great wagon roads; the great automobile lines of traffic are going to determine the desirability of property, and we are making a mistake if we do not wake up to what it means to support California in the winter and New England in the summer. You can not imagine the amount of money that is being taken out of this state. Do you suppose the Pennsylvania Dutch built five hundred miles of paved highway across the mountains of that state for amusement or to entertain their friends? Do you suppose the Yankees of New England have covered the mountains of Vermont and New Hampshire with paved highways simply to allow their money to be spent? My friends, they have built those roads because it is to their advantage to do so, and California and Oregon and Washington are doing the same thing. If the states of Iowa and Minnesota would build a scenic highway from Keokuk to Minneapolis, along the bluffs of the Mississippi river, it would draw thousands of people. It is one of the things that we can not afford to ignore.

In a larger sense there are other lines of division in the United States. I think one of the most serious problems before this country is found in the dividing lines of race. It has been the bane of the world from the beginning. There are more Indians in the United States today than when Columbus landed. You may think that is a very strange statement, but if you write to the Department of the Interior you will find it is true. The Indians are a small part of our population, and yet they are a part of us. Ten per cent of the American people are negroes. I want to say to you tonight that no permanent and enduring civilization can be built up on a submerged tenth of the population.

We had a training camp for negro officers at Fort Des Moines. There never was a finer body of men gathered anywhere in the United States. Forty per cent of them were college graduates. Six hundred of those men were enlisted as captains in the army. There were no guards upon the street cars running to Fort Des Moines; there was not a single complaint from any passenger. There are six or eight thousand colored men from the south today in this camp; they are in training to go out to fight. I am not here to say to you what the social basis of the race is going to be, but it must in some way be based upon fair play. We must solve the problem fairly, and eliminate in some way that line of division.

(Mr. Ingham then devoted some time to the discussion of the Chinese and Japanese relations.)

My friends, we must come to recognize that for some reason there are a great many different kinds of people in the world, and Providence undoubtedly had some purpose in placing us all here. There are a great many different kinds of religious opinions and political opinions and ways of doing business, and we must learn that each one of these different ways is worth trying out. We will never have a war with Canada, and yet their interests are very different from ours. Under the greatest provocation in the world, we have not gone to war with Mexico. If the nations of Europe had treated each other with half the toleration we have shown in Mexico, there would not have been any war. In the end, we are going to have Mexico on her feet, if there is any such thing. We are going to do there as we have done in Cuba and in the Philippines. I hope when the war is over, the feeling will be that America came to Europe for the purpose of helping Europe to solve her own problems, and not for the purpose of getting anything out of it for ourselves.

We are learning a tremendous world lesson in this organization, and we are learning it in every organization that brings us together. The thing to do is to appreciate that fact, and go out into our larger activities of life, and into our political relations, with this lesson on our lips, and use the tremendous influence we have in this great country to lay the foundation for a world that will be, as America has been, a world of opportunity, so that our boys and the boys of future generations will enjoy everywhere on earth the blessings that you and I have had.

The Toastmaster: There are a few things necessary in the prosecution of a war. First we have to get the men to fight, and then we have to provide the equipment—ammunition and guns—to fight with, and clothing and food. The feeding of the men is just as important as any one of the other things. Our government thought it necessary to appoint a Food Administrator, who would make it his job to see that not only our own people but our allies were fed. The Food Administrator thought it necessary to divide up his work. One of the crying needs on the other side is meat; so Mr. Hoover organized a Meat Division, and put Mr. Cotton, of New York, in charge of it. I think we have the very unusual honor of being the first organization which Mr. Cotton has visited. We heard him this afternoon tell us some of his troubles, but he can tell more amusing things if he wants to.

Mr. Cotton: Mr. Chairman, Ladies and Gentlemen: I came out here to talk to the Iowa men about food, and to say very little with reference to the Food Administration, and I did not realize that I had to have the results we got this afternoon approved by the ladies.

Practically all that we said this afternoon was to get clearly in all our minds that the work of growing hogs and cattle, altho it is the same work you have been doing before, has a real relation to the war, and to say that it is not so tremendously important what Iowa men make out of it, but it is enormously important that they do it. I came here not so much for what I might say to you as that I should be able to take back a clear vision that Iowa would keep on doing what she has done in the raising of live stock, and in order that the people in Washington, who are a little far away, should have a clearer vision of the troubles and the struggles that you are going to go thru in performing your duty for this year to come; because, while it is perfectly easy to say, "Raise live stock," that does not make it any easier to do; and it is highly important that the government administration understand the difficulties under which you are working.

The Food Administration in general is not an exciting job. There is one part of its work that I don't think is understood, and that I might speak of for a moment. The very first thing a Food Administration has to do is to look after the production and distribution of food and if it does not accomplish that, it is pretty unimportant.

I think very few realize that the Food Administration is today practically controlling the question of exports and imports. For instance, if we want to get sisal from Yucatan, which we must have, we are constantly controlling food exports to Chile; and in a number of cases the sisal. So if we want to get nitrates for explosives from Chile, we are constantly controlling food exports to Chile; and in a number of cases the investigation has shown actual shortage of many food products. Sugar, for instance, is a particular one, and we are preventing exports and trying to shorten consumption. That is not very important, except that I want to be sure you have no misunderstanding as to the purpose of the Food Administration. It has a purpose to keep down prices just as far as it can. I am not pretending that it is the special friend of any group of producers; it is not. It would not be worth its salt if it was. But I want to get the idea into your minds that while it is an organization which is trying to keep down the price of foods to the consumer, it also is wise or sensible enough to know that it can only do that if it gives to the producer a real living wage during the war; and that, I think, it does know and understand.

It has been particularly pleasing, Mr. Chairman, to come here and to meet the live stock growers, because they have told me so much, and told it so frankly and clearly. I did not come to talk to the ladies, and I am no man to call on for that purpose. That does not mean that I am not obliged for the opportunity and not very glad to be here.

The Toastmaster: I am sure we have all enjoyed Mr. Cotton's visit with us, and I think he will take back, both to his Chicago office and to Washington, where I understand he is going this week, the right sort of a notion of Iowa people. I think he knows now, if he did not before, that it is the sincere desire of our people to do whatever they can to help win this war. We are not looking for exorbitant profits, and are willing to take our losses if by so doing we are going to serve our country, and to continue taking them just as long as we have any money to lose. It is perfectly clear to every thinking man that the losses of the farmer, just as well as the losses of every other business man, are measured by the depth of his pocketbook; when he reaches the bottom, the stuff is off. We want you to feel, Mr. Cotton, that you can call on us for any possible service that we can render to you or to the Food Administration in general.

My brother, John P. Wallace, has been active during the past year in Red Cross work. Just now the Red Cross is launching a state-wide and nation-wide campaign, and I have asked him to come here, because he is chairman of the work in this state, and tell this representative body of citizens from the different parts of the state, something of that work, so that when you go home you can tell your own people about it, and have the part I know you want to have in that very necessary and important campaign.

Mr. John P. Wallace: Mr. Chairman, Ladies and Gentlemen: It has been my pleasure to talk Red Cross to a number of city audiences, but this is the first time I have really had the pleasure of talking to a farm audience, and it is a very great privilege.

As we have eaten a fine dinner tonight, had nice table linen, flowers, etc., do you realize that there are a million homeless people in Europe? That is one place where the Red Cross comes in. The Red Cross is taking care of homeless people in Belgium, in Poland, and in many countries in Europe. Do you realize that in this great battle on the western front in France, fifteen hundred villages and towns of France have been destroyed? Imagine, if you can, beautiful Iowa, with not a tree or a fence, and the ground filled with great shell holes, and you have a picture of the condition as it actually exists in France today.

The Red Cross is making homes for these people. Its services are twofold: Civil relief (which would come under that head), and military relief. Not only in France, but in all the other warring countries, the Red Cross is doing its work and doing it well. It was made possible by our campaign all over this nation last year, in which Iowa raised nearly two millions of dollars of the one hundred million dollar fund. Forty millions of that fund have been spent thus far in civil relief and military relief.

This coming campaign is not one for money; it is a campaign to interest every man, woman and child in the American Red Cross. No child is too young to become a member of the Red Cross; even a new baby is eligible to membership—no man or woman too old. There are no people who take greater interest in the Red Cross than the older ladies, knitting socks and sweaters, and they take particular pride in knitting socks.

As we sit here tonight, there are thousands of American boys in France, some of them already in the trenches. I call your attention to the fact that an Iowa boy, Merle D. Hay, who voluntarily enlisted in May, was one of the first three Americans killed. After reaching France, he wrote back home: "Tell the folks about the Y. M. C. A."; and they were giving this message in our camp when Iowa raised $1,400,000 for Army "Y" work. If Merle Hay had simply been wounded, he would have sent this message: "Tell the folks about the Red Cross."

The Red Cross is the only organization for relief work recognized by the government. It has its hospitals right up to the very firing line. After the first-aid dressing station there is an emergency hospital, where the absolutely necessary work is done. Just as soon as the wounded soldier is taken care of at the emergency hospital, he goes back to the base hospital, where the major operations are performed, and from the base hospital to the convalescent hospital; and then when the soldier is able to be out, they send him to a place where he can recuperate until he can get back to the firing line. The Red Cross operates and is back of every one of these hospitals.

You know in our own country the Red Cross is not a military organization; it is for the relief of suffering wherever it may be. In the Halifax disaster, the Red Cross was immediately there, reaching out its arms to succor the distressed in that city, where 25,000 people are homeless: If it were not for the Red Cross there would be no organized relief work for Halifax. In the case of the cyclones in Illinois, the Red Cross was down at Charleston and those other towns in Illinois and Indiana within a few hours after the cyclone. But the military work is the big activity at this time.

The Christmas campaign is to increase the membership from five million, which is now the largest membership of any nation, to fifteen million. On the first of January, 1917, there were only 250,000 members in the United States; Japan had 1,800,000. There are now five million members in the United States, and Iowa is one of the leading states per capita, with 350,000. I believe the population of Iowa is 2,358,611. The objective of our campaign in Iowa at this time is to make at least one out of every four persons a member. That would mean approximately 600,000. In many localities in Iowa today, I am glad to say that that quota is already passed; there are several towns that closely approximate one to every two. Our minimum quota is 600,000, but we wish that the maximum quota might be 1,000,000, which would not be quite one to every two persons. There is only one way in which we can get 600,000 members, and that is by organization.

When any of you are called upon to do anything in these times, I think it is your business to do it. It may not be convenient to do it, but if you are called upon to go out and work for the Red Cross, you should do it gladly. If you have any doubts as to whether you should become a member of the Red Cross and give some of your time to interesting people in it, just measure your time or money or anything else that you give by the gift of the boy who leaves a good business job and gives up everything.

Now, our plan of campaign in Iowa is to organize thoroughly every county. Mr. Ingham has told you eloquently of organization, and you can't do very much without it. We want the message of the Red Cross carried to every farm home in Iowa, and that is one of our biggest problems. Where people are gathered in towns, it is an easy thing to get at them. In Des Moines there are a large number of men who have a large acquaintance, and they get together and parcel out the territory, and we see that all our people are seen in any of these campaigns. I think there is no question but what the farm people can do more to put across this Red Cross campaign this time than the city people; but they will have to be willing to get out and do just as we do—give up a little of their time and work—and we are going to ask you to do that. When they asked me to take the state chairmanship, I was glad to do it, because I felt it was my duty.

In every country there are organized Red Cross chapters; in many counties they have several chapters and a large number of auxiliaries. I think nearly every one of these chapters will touch some of you folks. Nearly every county has its organization under way by this time. That organization usually consists of a general chairman. In a city like Des Moines, they have a general chairman and field marshal, and we have three men each of whom heads a division, and each division has eight captains, and each captain has eight men under him, making approximately two hundred and forty men who go out to work. We want something of that sort in the county organizations—at least a general chairman, and as many captains as he deems best to have; and these captains will try to enlist all of you folks in working for the Red Cross in your individual communities. We want to secure as many members as possible, but it is not money we are after—it is your interest.

There are two classes of memberships which we emphasize in this campaign, the Christmas, or $1.00 membership, which simply means that you believe in the Red Cross, and want to be identified with it; and the $2.00 membership, which is simply the Christmas membership and enough additional to send you the magazine. The Red Cross magazine you will find worth several dollars in itself, because it tells the story of the Red Cross in a way that no other magazine tells it. So the amount of money is not large, and yet if we do as we want to in Iowa, and secure 600,000 members, it will mean that fifty per cent of the money will stay right at home, because 50 cents of each Red Cross membership stays with the local chapter, and that money is used for purchasing material for surgical dressings, for wool for sweaters and yarn for socks, and for needed supplies. The other 50 cents goes to Washington, to pay the expenses of keeping up the organization, and I may say in that connection that the Red Cross is the least expensively run organization of any in the entire country. The head of the Red Cross, Mr. Davison, a New York banker, who received, I believe, $100,000 a year, has left his business and gives his whole time to the work. Mr. Gibson, the manager, does the same. There is only one salary out of seven hundred people interested in the Red Cross that amounts to over $6,000, and that salary is $7,500, and was paid before this war began. There are only five salaries that run up to $6,000. The most of the money paid out for Red Cross help is for stenographers, bookkeepers, etc.; and because so much of the help is voluntarily, the expense of the Red Cross is practically nothing—so the 50 per cent easily keeps up the expense at Washington.

If you are already a member of the Red Cross, in this campaign you will be asked to renew your membership, no matter when you became a member, unless since the first of October. If we waited to get the renewal of your membership next June, it would take a lot of time that we ought to be giving to the war itself, because by the first of next April you may expect to read bulletins on the streets of the cities, and casualty lists in the newspapers, and there will be some of your boys among them; and if we wait until then to get back of the Red Cross, we are going to be too late to save a lot of our boys. So when you are asked to renew your membership, do it cheerfully. If you became a member in June, your membership will be automatically extended till a year from next June, but we ask you to pay your dues in December, so as to get all the work out of the way at this season of the year.

I wonder how many in this room are members of the Red Cross? (Quite a large number of hands were raised.) I want to appeal to you members not to wait to be asked to work in this campaign, but when you get home, call up the chairman or the auxiliary and tell them that you want a part in this campaign.

This is the Red Cross service flag. (Mr. Wallace here displayed the flag.) All the chapters in Iowa will have one of these flags for every member. The idea is that as soon as you become a member of the Red Cross in this Christmas campaign, you put this flag in the window, and on Christmas night we want you to put a candle behind the flag. Wouldn't it be a fine thing if that service flag of the Red Cross was in every window in Iowa on Christmas night! For every member there will be a little red cross. This signifies one member in a family, and for every additional member they will have a little Red Cross sticker to put in the corner for each member of your family who is a member. There ought to be a lot of 100 per cent memberships. That would mean a $2.00 membership for the head of the family, which would bring the magazine, and a $1.00 membership for the wife and each of the children.

I hope you will do as I request volunteer your services now; and I hope those who are not now members will become so before Christmas. I think there should be very many homes in Iowa with less than fifty per cent for the Red Cross, if not one hundred per cent. I do not see how we can sit at our firesides on Christmas night and realize that the Red Cross will be responsible for bringing many of our boys home to us—perhaps saving many of their lives through quick and efficient treatment when they are wounded, and say to ourselves that we have not worked in this campaign and are not even members. I hope no farm home in Iowa will say that on Christmas night.

President Sykes: I wish to endorse and commend everything that Mr. Wallace has said concerning the work of the Red Cross and the part that we should take in maintaining it. I believe that we people in the agricultural and rural districts do not appreciate what the Red Cross is doing for the world. Let us not be stingy with our money. What does $10 or $15 or $25 amount to, anyway? We have got to win this war; we are all set on that; and if the Red Cross can help us to win it, let us help the Red Cross. I hope that every one of us, when this campaign comes on, will do his part willingly and enthusiastically, and get the other fellow to take hold and do what he can in this good work.

In the temporary absence of Toastmaster Wallace, President Sykes called upon D. W. Anglum, who told in an amusing manner of his recent trip to Sheridan, Wyoming. President Sykes then introduced Professor W. A. Cochel, of Kansas.

Professor Cochel: Ladies and Gentlemen: I have lived in Kansas now for a little over six years, and in that time I have learned to accept all the stories that are told in regard to the state, and say that they are true. Our state is a little different from Iowa, in that it has a different kind of history. I was brought up in Missouri, and those of you who know the feeling of Missouri towards Kansas can realize the absolute change in attitude that I have had to have in order to become a loyal citizen of the state. It used to be true in our section of the country that to tell a man to go to Kansas was a higher insult than to tell him to go to another famous place that is even hotter. It seemed to worry my people very much when I first went to Kansas, because of the fact that they objected to addressing a letter to me in that particular state; but they have learned better now. And those of us who have lived in Kansas and learned the ways of the Kansas people, can't help but appreciate and admire the fact that things do happen rapidly, that the people there are as loyal to their state as the people here are to Iowa; and after you know them well, you realize that it is justly so. I used to think that I would never say anything about a state in which I lived, because of the fact that it looked as if a man was bragging on things unnecessarily; and so I will not say anything further about Kansas except that it is really a good place to live. It is a place that we all enjoy, and if any of you ever get dissatisfied in Iowa, probably you will find something different in Kansas that may meet your needs at that particular time.

I came to this meeting six years ago, and I cannot help but notice the difference in the attitude of the Corn Belt Meat Producers' Association toward their meeting. None of the ladies were present at the last banquet that I attended, and really I can truthfully say that it is a decided improvement to have them here. It is a matter of a great deal of satisfaction to those of us who are interested in agricultural organizations to know that a group of men representing the industry which you represent in your state are able to get together year after year, to grow in influence, and to make yourselves felt not only in your own state, but in every state in the Union. I think no great question has come before the live stock men of the United States for solution in the past ten years but what the Corn Belt Meat Producers' Association has contributed much to the solving of it, if not more than any other group of men interested in this particular industry. That means that you have had grouped together a lot of men who are vitally, permanently and financially interested in the industry. It means that you have not looked upon this annual meeting simply as a social organization at which you can get together and shake hands and say Hello! and How do you do! to one another, but it means that you have come here with a purpose in view, and shown your excellent judgment in electing as officers and as your spokesmen from year to year men who command the respect and confidence of the live stock men in every other state in the country.

At the present time our live stock industry is considered one of the most important of all those that are engaged in the prosecution of the war. Mr. Cotton tells us that next to the production of munitions, probably the production of food is the most important single factor in the winning of the war. Iowa being the greatest hog state in the Union, and the hog being the greatest fat producer of any animal that grows, it means that you will contribute the greatest share in that particular towards the winning of the war.

We have learned in recent months to take an entirely different viewpoint toward our industries than we have ever taken before. Heretofore at these meetings, it has been customary for the men who were discussing the various subjects on the program to confine their remarks almost entirely to the immediate profit which they were going to get out of their efforts, to look toward the evils which were pursuing them and would reduce their profits. Today we have not heard a word of discouragement toward any other industry as it is related to ours, nor a word of dissatisfaction in regard to the condition of our industry; but we are all here together to take what is coming to us and to do our share, and do it cheerfully, regardless of almost anything that may happen. That is the attitude of the live stock men in every state in our Union; they are big, broad-minded men, who are ready to contribute in every possible manner toward the winning of the war, which we of course all realize is the biggest job that has ever been set up before our country.

Now, coming from an educational institution, I can not help but call your attention to a few things in connection with the winning of the war. There never has been a time in the history of our country when an education on the part of an individual citizen has been so valuable to our country as it is today. We find in our state, and you find in yours, that in the selection of the additional officers to command our armies the first requisite that the United States army has made has been that those men should be educated men. I don't know how many of our self-made cattle men in Kansas who have not had the opportunity of obtaining a college education have come to me and said that this was the first time in their lives that they ever came up point-blank against a proposition that they were unable to put over, simply because of the fact that they were not classified as educated men. The president of our local Hereford Cattle Breeders' Association came to me less than a week ago, and said that he had tried to get into the first officers' training camp, and into the second officers' training camp. He is as good a citizen as we have. He is of draft age, and he said that the only reason he was turned down in either instance was because of the fact that his education had not been sufficient. He is one of the most progressive, shrewd, keen men we have in the state, and yet that one thing has kept him from doing his part as he felt that he could do it most efficiently. He is a man who is able to command men; he has employed men and has done it successfully; and he is a man in whom everyone has confidence. The men who work for him consider him one of the most liberal employers in the state. I cite that as an indication of the tendency in our country toward educating the larger proportion of our citizens—what it has meant in the past and what it will mean in the future.

I just happen to have a list made up of the men who were in attendance at our institution last year in the animal husbandry work, and while but one and a half per cent of our total population are now under arms, the junior and senior students are now under the colors to the extent of a little over 21 per cent of the total enrollment; and that is the history and condition in practically every educational institution in the country. Our educational institutions have been developed upon lines which enable the students to realize that their country is one of the most important factors, if not the paramount factor in their lives.

If we felt that this condition which now confronts us is only one of the individual, and that the country as a whole is not particularly interested in it, the sacrifice would not be worth while; but under the present circumstances we must feel that this war in which we are now engaged is being carried on the same as every other great war in the history of the world—for some definite, specific purpose—and that we are going to come out of it a better nation, a better people. We are going to have different ideals from those that we have had heretofore, and it is because of the fact that we are contributing the best we have in men, in food, in inventive genius, in munitions, in every factor concerned in the winning of the war. It means that when this war is closed and our part of it is written, the good which is to come out of it in the end must of necessity be greater than any good that has ever come out of any war in the history of the world, because it is the biggest, the most expensive, occupies a greater number of people, and is going to be fought to a more definite and final finish than any that we have ever been engaged in. The live stock men are contributing their share in every way. They are the men upon whom we have depended in times of peace to exercise the best judgment, to contribute to our country the best that has been contributed to it; and we are finding in our section of the country—and I know you are in Iowa—that the live stock men are the ones who are leading in every way in the winning of the war, and contributing their share toward its success.

The Toastmaster: We are doubly fortunate tonight in having with us the chairman of our State Council of Defense, the Hon. Lafayette Young. He has been spending the entire day outside of the city, came in at 8:40, and was kind enough to come and talk to us a little while.

Senator Young: I am a member of the meat consumers' association. I am glad to hear our friend from Kansas speak. If I should ever be born again, I am going to select Kansas, just on chance.

The people of the United States have a big job on their hands—one that they did not seek, but one they can not avoid. The United States never engaged in the war of her own volition; she did not fire the first shot in this war, but she is making arrangements to fire the last one. The United States never engaged in a war that was not for the liberty of our own people and the human race generally. Germany never engaged in a war that was not for her own individual aggrandizement, either in money or lands. What we lack in the United States is appreciation. We have been shy on patriots. We have not had them in the schools or the churches or the colleges. We have not had patriots on the farms, in the shops, or anywhere else where we should have had them. In my foolish days, I used to lecture a good deal, and I have been at colleges and churches where there were large gatherings of handsome ladies and fine-looking men, with roses on the table, but not a sign of an

American flag or the American colors. The crudest band that ever undertook to play anything would undertake a selection from Lohengrin or some other great opera rather than take a chance on "America" or "The Star-Spangled Banner." That is why we have to hold these missionary meetings.

I say, God bless the United States! It is the only place where you have room to spread yourself, where you have inspiration to do big things. There are only two places in the world where a man is free. One is on the boundless prairies, where he can say and do things out loud, and the other is in the vastness of a great city like London. Abraham Lincoln was a child of the prairies; he was free. William Booth was a free man in the midst of the multitude; and in our past half century there have been no names to surpass those of Lincoln and General William Booth.

My friends, the thing that we can all do is to promote loyalty and enthusiasm in our neighborhoods. While I am chairman of the Council of Defense for the state—a sheriff, as I call myself, for the state, working without compensation, and without a particle of authority, you can all do just as much without authority as with it. I am glad to do what I can, because I am not killing any Germans, much as I would like to. There are none around here that I would like to kill; but I would like to reform a great many. All I want to know is that a man is for the old United States of America—if he is, I am for him. If he is against the United States, I will be very glad to furnish him money to buy a ticket and send him back to the country from which he came. I want you to understand that against all comers—Germans, Swedes, Italians, Danes, Greeks, and all other people and all other countries—I am for the United States, seven days in the week. May the God of Abraham, Isaac, Jacob, Cromwell, Milton, Washington and Lincoln, guard, guide, protect and defend thru all the coming ages this great free republic of the western world!

The Toastmaster: We have heard from a member of the Food Administration who has been carrying on some conservation work. We are going to ask Professor Bliss who has been at the head of that work in this state, to tell us about it.

Professor Bliss: Mr. Chairman, Ladies and Gentlemen: I have attended the meetings of the Corn Belt Meat Producers' Association for a number of years, but I have never attended one that I have enjoyed more, nor from which I have received more profit than the one today. I am sure that every member will go back home determined to do all that he can in his locality to help Uncle Sam in the present crisis.

Mr. Wallace has stated that I have had something to do with our food conservation campaign in this state. I may say that I am connected with the Agricultural Extension Department at Ames, as most of you know, and that department in the present war is the official representative of the United States Department of Agriculture and of the government in food production work. Immediately upon the outbreak of the war, we began studying and planning as to how we could best carry on the work that was cut out for us. Last spring a special effort was made along the line of garden work, as you know, and the Volunteer Food Producers' Association was organized with 20,000 members. The food conservation campaign was carried on last summer, which entered every county in the state of Iowa, and paved the way for the recent campaign of the Food Administration in this state, which has resulted in a larger number of signatures, I believe, in accordance with our population, than in any other state of the Union.

We carried on these activities during the spring and summer with our own funds. Late in August, the government funds appropriated especially for war purposes (I want to make that point clear, that the enactment under which we receive our funds now specifically states that it is an act for the national defense and for the purpose of winning the war with Germany) became available. The government asked us to first organize the state with farm improvement associations. Most of you are familiar with this organization, which provides for a membership of 200 farmers or farm owners in each county, who will raise in the neighborhood of $1,000 thru subscriptions for the support of this work. We have to organize at the present time if we are going to meet the Prussian menace. We can't do it as individuals, we must work as a unit. I am very glad to inform you tonight that practically seventy counties in this state already have farm improvement organizations organized on the basis I have mentioned, and it is our purpose and plan to put this organization up to ninety-nine counties before spring work opens. Whether or not we can do that will depend upon the cordial co-operaiton of the people living in these counties.

I am not taking any credit for our extension work; we don't deserve any. We are merely trying to be loyal and do our duty. But I do feel that the people of this state deserve a great deal of credit in their respective counties for the way they have taken hold of this work and pushed it forward. There is very little kicking about the proposition at this time. In some localities you will find people who kick. The man who kicks and holds back puts himself in the same class with the fellow who kicks against the Red Cross and the Y. M. C. A. This is a time when we must get back of the government program and push hard in order to get it thru, and we are very grateful for the whole-hearted support the people are giving this work.

There is no use in organizing simply for organization's sake, but I want to tell you that the people of Iowa have one of the biggest problems on hand to find sufficient seed corn for next year's planting. 'A strenuous effort will be made thru all of these organizations to ferret out this seed and have sufficient good seed stock for the farmers of this state for next spring. It is a problem that we must work at industriously if we are going to meet it.

The government has asked for an increase in the production of pork. We had Mr. Cotton out here today to tell you what the Food Administration intends to do in this regard, and I feel myself that the prospects for pork production were never better than they are right now, and I believe the farmers of this state are going to get back to this movement and do their very best.

Then there is the question of labor—probably the most serious question which we face; but we must not permit ourselves to think that we can't meet this situation. We are a strong, resourceful people, and we must meet this situation and produce these crops, and we can do it thru careful organization and thru the mobilization of the labor which we have. I heard Dean Hunt, of California, speak the other day. He has recently been in Canada, spending three weeks there investigating their labor conditions. Canada has done a remarkable piece of work in this war. According to Dean Hunt's statement, the United States will have to raise an army of 5,000,000 soldiers and $40,000,000,000 in order to equal the work that has been done by Canada up to the present time, and the Canadians are just going ahead and doing some more big things now. Dean Hunt stated that the Canadian farmers had managed to keep up their production all the time they were doing these other things. I believe that if we organize carefully in this state and get hold of our available labor and create a sentiment which will make it disloyal for anyone not to work who is able to work we will be able to meet this labor situation next spring, and that is exactly the thing we must do. Mr. Hunt said that the Canadians met their labor situation by eliminating non-essential things, and by placing greater emphasis upon essential things; and that is one of the things that we have to do in this country at the present time.

I have been impressed by the talks that have been made here tonight, but nothing has impressed me more than the emphasis which has been placed upon the responsibility of the home folks. It has been about eight months since we went to war, last April. At that time the Russian people had overthrown the czar. We had high hopes that those Russians would go ahead and do their part to help win the present conflict; but they have fallen down not because of any dissension in the army, but because they did not get any support back home. The army has been the last of all to break up and capitulate. We have recently seen the Italian army forced back on their own home ground, I believe largely because they did not have the necessary supplies in order to stand upon the battle line. In other words, the people back home, for some reason or other, were unable to supply the troops at the front with the necessary help. I suspect that similar conditions might exist in France were it not for the support that the United States and other countries have given them in the way of food and supplies. I am mentioning these things to call your attention to this point. The army of the United States is going to give a good account of itself, and we are going to demand of these young fellows who go to the front the very highest grade of patriotism and bravery; but there is not a particle more responsibility resting upon them than upon the folks at home, and we must organize in order to support them. We are just as morally responsible to sacrifice our own time and pleasure, and our own money, if need be, in order to support these boys, if they are to give a good account of themselves when they get on the western front, and that is the thing we must do. Merely because we live in a free country does not mean that we are going to beat the Prussians, not by any manner or means. Our army may believe in democracy, but that fact is not going to win over an autocratic army. They must work as a unit and all push at once, and we have got to do the same thing here. The fact that we believe in democracy is not going to beat the Prussians. We have got to work as a unit, and not as disorganized groups. If a pig is worth as much as a shell in winning this war, then we out here in Iowa ought to do our part toward supplying the pigs. I am confident that that will be done. Personally I feel that the partriotic sentiment in this country is going forward rapidly now, but it needs good, strong, whole-souled, patriotic fellows in every locality to get back of it and push it. I don't look upon it as being particularly patriotic to grow these crops and try to meet the government program; I look upon it as a case of loyalty. It is a case of being loyal to the government in the present emergency, and I venture to predict that when this year rolls around, you will find Iowa coming up to the harvest time with her usual good crop.

In conclusion, I want to say that we of the extension department are at your service; we want you to use us just as much as you possibly can. We are for the government program; we are bending all our energies in order to further it and beat the Prussians. If you can aid us in any way, we will be glad to have you do it. That is our purpose and object during the coming year, and we hope we may be of some help to the national government in accomplishing that end.

The Toastmaster: One of the finest things about our association is that as the older members, who bore the brunt of the work in the earlier years have been going on, a large number of young men have come into the association. We want to hear from a few of those men in a few words tonight. We want them to get acquainted with the old members.

Brief but pointed responses were made by Mr. Harry Fox and Mr. Drury, of Sac county; H. S. Martin, of Monroe county; U. S. Baxter, of Ida county, and Mr. Hileen, of Cherokee county.

The Toastmaster: I wish we had time to call on more of these younger members; it is an inspiration to those of us who have been in the work longer; but we have our election of officers to attend to, and I think we had better begin on that. I will entertain nominations for the coming year.

ELECTION OF OFFICERS.

Mr. Eisele: We have a man among us who is known all over the United States, and is talked of wherever you go, and I believe that he can do us more good than any other man whom we could nominate here this evening. That man is Mr. Sykes of Ida Grove, and I put him in nomination for president.

(Upon motion, the rules were suspended, and the secretary cast the ballot of the association for President Sykes, who was thereupon declared duly elected for the ensuing year.)

Vice-President R. M. Gunn and Treasurer Charles Goodenow were also elected to succeed themselves in office.

The following nominations for directors of the even-numbered districts were ratified by the association:

Second District	E. D. Baird
Fourth District	Wm. Larrabee, Jr.
Sixth District	J. F. Eisele
Eighth District	Geo. W. Swan
Tenth District	Charles G. Cockerill

This closed the evening program, and adjournment was taken to 10:00 a. m. Wednesday.

WEDNESDAY, DECEMBER 12.

MORNING SESSION.

President Sykes presiding.

The report of the committee on resolutions was presented by Chairman Evvard, and with slight amendments was unanimously adopted. The report of the committee, with the addition of another resolution adopted previous to adjournment, follows:

Secretary Wallace then read his report, as follows.

RESOLUTIONS

The delegates in attendance at the fourteenth annual meeting of the Corn Belt Meat Producers' Association, held in Des Moines, December 11 and 12, 1917, congratulate the thousands of members scattered over the state, in the continued strength and usefulness of their organization. It has consistently served the farmer and stockman for a longer period and more effectively than any other organization in the history of the state. We commend the conservative manner in which it has been managed, as well as the aggressive manner in which it has fought the battles of the producer against organized capital. For ten years past it has been the recognized leader in the struggle to secure fair freight rates, and can fairly claim credit for preventing many unjust and burdensome advances. In the emergencies which have confronted western agriculture, as a result of war conditions, the officers of this association have rendered invaluable service, not only to agriculture but to our government, and we pledge their continued service and the service of every member to aid the government in the successful prosecution of this war to a finish.

Resolved, That we appreciate the services rendered by Senator A. B. Cummins in securing the amendment to the interstate commerce law which has finally ended the practice of avoiding by the railroads their responsibility for damages to live stock caused by their own negligence

Resolved, That we note with satisfaction the able services being rendered to the shippers of the country by the Hon. Clifford Thorne, who began his work in this line as attorney for this association.

Resolved, That the operation of the law which requires live stock to be unloaded for food and water at the end of twenty-eight hours, should be suspended during the continuation of the war; and that the maximum time on live stock car shipments without signed release of shipper be extended to thirty-six hours, with a further extension to forty-two hours when release is signed by said shipper. Freight shipments are congested, and the observance of this law adds to the congestion and very frequently causes wholly unnecessary losses and unnecessary cruelty to live stock, as well as waste of food.

Resolved, That war conditions and governmental control should not operate to relieve the railroads of their full responsibility for losses suffered by individual stockmen thru delayed shipments.

Resolved, That the Bureau of Animal Husbandry should amend its rules with regard to the amount of food for live stock in transit, and should advise the railroads that the amount of food to be used for such purpose shall be determined by the shipper.

Resolved, That because of the unusual demands upon our railroads on account of the war having brought about a condition which seems to make it necessary that they should be operated as one system, that the laws which forbid pooling should be temporarily suspended. We recognize the absolute necessity of maintaining our transportation lines in the highest state of efficiency, and we endorse the suggestion that they be operated by thoroly competent men under government direction and control. We therefore favor such action by congress as may be necessary in order to do in a legal way that which is necessary to be done. We see in this, however, an opportunity for serious abuses, and we urge upon congress the necessity for providing adequate safeguards, to the end that when this war emergency is over, readjustment shall be made which will be fair both to the people and to the railroads.

Resolved, That the fertility of our lands can be economically maintained only by diversified agriculture, to which live stock is absolutely essential. It is unwise and unpatriotic to encourage or permit prices of grains and grain products which will stimulate production at the expense of live stock. It is especially important that our live stock industry shall be fully maintained, to enable us to supply our allies with meats and meat products. The Food Administration, therefore, should preserve a balance between grain prices and live stock prices, which will maintain the economic production of both, having in mind both the present emergency and the future of our agriculture.

Resolved, That we commend the Food Administration for its action taken with regard to prices of hogs; and we trust that it will, so far as lies within its power, endeavor to preserve an equally fair ratio between prices of beef and mutton and prices of grains and other foodstuffs used in their production.

Resolved, That in administering its license arrangement with the packers, the Food Administration should see to it that complete detailed records are kept of the various phases of the packing business, to the end that when the war is over, the government may have thoroly reliable information which will enable it to establish such regulations as will do full justice to packers, producers and consumers.

Resolved, That agricultural production is dependent upon skilled agricultural labor. For some years past, there has been a steady drift from the farm to the city. Industrial, related and other conditions brought about by the war have accelerated this drift. This, combined with the voluntary enlisting as well as the drafting of our men into active service, has still further aggravated the farm labor situation. Skilled farm labor is becoming more and more difficult to secure. As farmers, we gladly assume our full responsibilities in carrying on the war to a just democratic termination, but we wish to make it clear to those who have the responsibility of feeding our own people and our allies, that the continued withdrawal of farm labor will inevitably seriously decrease production.

Resolved, That we are making suggestions as seem wise for the conduct of the war from the producer's standpoint; but, whether or not such suggestions are adopted, we are behind the government to the last dollar and the last man, in the successful prosecution of this war, prosecution until the mailed fist of Prussian autocracy shall have been banished from the earth.

Resolved, That copies of these resolutions be forwarded to the United States senators and members of congress, the United States Food Administration, and the United States Department of Agriculture. Washington, D. C.

(Signed)

JOHN M. EVVARD, Chairman, Ames, Iowa.
H. C. WHITE, Garrison, Iowa.
OSCAR HELINE, Marcus, Iowa.
D. W. ANGLUM, Larchwood, Iowa.
F. G. TURNER, North English, Iowa.
C. K. THORNBURG, Linden, Iowa.
F. C. CESSNA, Grinnell, Iowa.

Secretary Wallace then read his report, as follows:

SECRETARY'S REPORT—1917

Receipts for the year		$7,527.25
Disbursements—		
Bank collection fees	$ 45.25	
Annual meeting	116.08	
Directors' expenses	152.18	
Refunds to county associations	277.04	
Expenses of delegates to conferences at Chicago, Washington, etc.	298.29	
Stamps, printing, annual reports, etc.	634.51	
Surety bonds for secretary and treasurer	20.00	
Donation to American Live Stock Association	100.00	

Donation to National Shippers' Conference	300.00	
Donation to National Conference on Marketing and Farm Credits	50.00	
Clifford Thorne, legal services	1,250.00	
President's salary and expenses	2,367.12	
S. M. Corrie, assisting president	110.80	
Secretary's office, for 1916 and 1917	2,000.00	
Total		7,721.27
Deficit on year's business		$ 194.02

This has been a good year so far as receipts are concerned, and very fortunately, too, because we had a rather bad year last year. The heavy delinquencies are in a few counties, and if Mr. Sykes can get around to them this coming year, I am quite sure they will be pretty generally paid. Our expenses for the year also have been considerably heavier than usual. The item of bank collection fees, $45.25, is caused by the banks remitting for pledges paid and deducting for exchange.

A Member: Why do we squander that $20 on surety bond? I don't believe this association needs that expenditure.

The Secretary: I think our constitution provides for a bond for the secretary and treasurer.

The President: It has been the custom of the organization, as well as of all other similar organizations. I think it is just a "safety first" proposition. We may not always have Mr. Wallace and Mr. Goodenow for secretary and treasurer, and it is setting a good precedent. Sometimes things go wrong in organizations as well as in other institutions. Personally, I think it is all right. It does not show any distrust of our officers.

We will listen to the report of the treasurer at this time.

Mr. Goodenow: Mr. Wallace's report does not deal with balances, and my account will probably make somewhat plainer just how much money we have actually on hand.

All thru the fore part of the season, until along in October, we were very short of funds. Once, if I remember right, I wrote Mr. Wallace that we had no funds at all. But I still paid the orders as they came; they were very few. I think I had probably one or two hundred dollars that I discharged from my own account at that time, and carried along until later the funds began to come in quite freely. Now we have a very nice balance, and of course it is one of the best years that we have ever had.

My balance does not show exactly as Mr. Wallace's did on account of funds that were on hand from last year, but the final balance is the same. This year there is only one order out for $103, so that the orders are practically all paid.

The President: We will now listen to the report of the auditing committee.

Mr. Cockerill: The auditing committee was appointed Monday afternoon, and audited the accounts of the secretary and treasurer, and this is the report.

REPORT OF AUDITING COMMITTEE—1917

We, the committee appointed to audit the accounts of the association, have examined the books of the secretary and the accounts of the treasurer; have checked each item of expense, and find the books correct.

Balance in hands of treasurer from 1916		$ 3,703.75
Receipts this year (including secretary's balance and less bank collection fees)		7,515.22
Total		$11,218.97
Expenditures for year (less bank collection fees)	$7,676.02	
Voucher from last year	6.86	
	$7,682.88	
Voucher not yet paid	103.00	7,579.88
Balance in hands of treasurer		$3,639.09
Real balance		3,536.09

CHAS. G. COCKERILL,
E. L. HILL,

Upon motion, the reports of the secretary, treasurer and auditing committee were duly adopted:

The President: We will now have an address by Mr. J. G. Mitchell, of Greene, Iowa.

COLLECTING FREIGHT CLAIMS

Mr. President and Gentlemen: I believe that we are all agreed upon one proposition, that there was never a time when greater vigilance in connection with the movement of freights, and particularly of live stock, was necessary. It is a matter that should be considered not only in justice to ourselves, but in the interest of this nation and the nations of the world. There was a time when we considered it a fact that whatever loss there was on account of delay and negligence of the railroads in transporting live stock could be measured in dollars and cents. I think we are beginning to set new values on those things, both from a moral and a material standpoint, and we realize that losses of this kind are to be considered not only in relation to the money that we lose, but in relation to the great crisis in which we are involved and the great business we are carrying on. Therefore, I would suggest that it is a duty that we owe not only to ourselves but to the nation, that we should insist upon the greatest vigilance in the movement of freight commodities, and particularly of live stock; and that can be done by enforcing the claims, so far as we are able to do so. Once a shipment is damaged and there is an amount lost, that is gone forever; but we have to consider the effect upon future shipments; and if the railroads feel that the live stock men as a body are after these things and are going to assert their rights, they are going to be a little more vigilant, I think, and use their utmost powers in moving the freight, to conserve themselves from any further financial loss. There is absolutely no advantage to the railroad in a loss of this kind, whether they have to pay for it or not.

I think it is always of value to know something of the principles that underlie the rights that we have in connection with the movement of freight. You know we have spoken a good deal of the common law liability of the carrier. That is a matter of history, and goes back to the days of the stage coach. You remember the character in "Lorna Doone," who says that he thought they went faster than the Lord Almighty ever intended men should go. That day has gone by; the only question with us now is whether they go half as fast as the Lord Almighty and we wish they would go. You are aware that the days of the stage coach were not so safe on the road, and we have still a few highwaymen left. The consequence was that the driver of the stage coach and the owner of the concern were held to a greater liability in the handling of goods than was required of any other man. For instance, if a piece of property was left with a man to take care of, he was simply a bailee, and held to a reasonable degree of care—such a degree of care as the ordinary man would use in caring for his own property. But the stage coach driver who was moving the stuff from one place to another was held to a greater degree of care, because very often they found there was collusion between the stage coach driver and the highwayman; therefore, they held that man to absolute liability as an insurer of the property, so that if it was stolen he couldn't set it up as a defense to his own liability.

The common law with reference to the carrier's liability has been developed. The days of the stage coach did not anticipate the days of the railroad, and I suppose the early days of the railroads hardly anticipated some of the forms of carriage that we will have very shortly. There were certain exceptions to that liability—the act of God, for instance; a storm, snow—anything that a carrier could not anticipate. If the goods were liable to quick fermentation or decay, the carrier was never held liable under the common law. Then there was the question as to whether the shipper himself was responsible. If there was any deliberate negligence on the part of the shipper, the carrier could not be held negligent. After a while the carrier got sense enough to find that he could contract with the shipper to avoid liability; and I suppose the contracts were a matter of bargain at one time, until finally the railroads got their attorneys to work and had their contracts printed, so that all you had to do was to sign your contract and you were bound up tight.

There is this to be remembered, that there has never been an absolute liability as to live stock, for the reason that the absolute liability of the carrier has always been predicated upon complete control. A carrier has never had complete control of passengers, and could never be presumed to have complete control of live stock. There is always a certain volition in animals, and sometimes they will do themselves damage, or there may be damage done for which the carrier can not possibly be held responsible, and can not be charged with negligence. So the question that has always arisen in connection with live stock, tho not to the same extent as with passengers, has been whether the carrier has been negligent. Of course in the case of loss by unreasonable delay there is always that presumption.

There has always been freedom of contract under the common law, and the carrier, as you know, was in the habit of printing in his contracts that you would have to give notice within a certain time, otherwise he was not liable; and you might limit his liability under certain circumstances by placing a certain valuation upon the live stock or whatever the goods were. This has been carried to a considerable extent in favor of the carrier, and the courts went definitely on record that those contracts were valid and enforcible practically without reference to their equity. It would almost seem that the courts were unable to distinguish between a man's entering into a contract and being forced into it. It was decided by the supreme court that those contracts with limitation of liability upon the valuation of the stock were enforcible, valid contracts, and, further than that, that any limitation as to the time of giving notice was valid. In some instances a man had contracted to give notice before he got his stock off the cars, or within a few hours after, before they were mingled with other stock.

Congress has made several efforts in the form of legislative enactment to cure this condition in the interest of the shipper. The most recent of these is generally known as the Cummins amendment to the Carmack act. While the statute is too recent to give the supreme court a trial at it to see what it means, I think there is very little question but it covers some of these questions that we have had up. As to limitation of liability, there is no question as to ordinary live stock; that is made an exception. As to other goods, where there are two charges filed and approved by the Interstate Commerce Commission, there can be a valuation set upon them, and if there is any consideration of a lower freight rate which has been approved by the commission, there is no question but that valuation would stick, and that would be the measure of damages in any event. In other words, if it were valued at $100 for the lower rate, and the actual value was $1,000, you would be limited in your recovery to $100. But there is no such contract for limitation of the value or releasing as to ordinary live stock.

There is a provision in the Cummins amendment to the act to regulate commerce which disposes of what is ordinary live stock as nearly as can be. I don't think I can do better than to give you the language:

"The term 'ordinary live stock' shall include all cattle, swine, sheep, goats, horses and mules, except such as are chiefly valuable for breeding, racing, show purposes, or other special uses."

That is clear, I think, without any attempt at interpretation, so that, so far as the live stock shipped for market purposes is concerned, there is no way that the carrier or shipper may contract to limit the liability for less than the actual value.

There is another important element that this amendment was intended to meet. In many cases there were shipments without any actual written contracts, especially in the case of express shipments; and now it is required that in shipments under this act there shall be a bill of lading issued, but if there is not, the carrier is still held to the same degree of liability.

I don't know whether it is too elementary a matter to treat of, but it is not now necessary for the shipper to try to find out which of the connecting carriers is responsible; all he has to do is to go after the first. At first glance, one might think there was some unfairness about that, and question whether such a statute could be enforced; whether one should be held for the negligence of another. If the actual damage was done on the cars of a connecting carrier, why should the initial carrier be held liable? That is disposed of, and there is no question about its being a law and enforcible, for this reason, that the connecting carrier has been held to be simply the agent of the initial carrier. He is the principal in the matter, and the principal is responsible for the acts of his agent in the course of his duty, within the scope of his authority; so it would be useless to go into an extended discussion of that question. You have only to look to the initial carrier, and if it finds that some other carrier is responsible for the damage, it has its recovery against the connecting carrier who is guilty of the negligence.

As to the notice to be given, I observe in one of the live stock contracts I have, there is a notice which requires that in case of loss to persons accompanying the stock, a notice is to be given in thirty days. I don't know that this Cummins amendment was intended to cover the caretaker who accompanied the live stock. It was purely directed to the live stock, and the railroads are endeavoring to prepare a contract which will conform to this law and give them the measure of protection which the law gives. The law provides that no contract shall be enforcible which limits the notice of claim to a shorter period than ninety days, or the filing of claims to a shorter period than four months, or the institution of suits to less than two years; but if the carriers incorporate that in their contract, it will be necessary for you to comply with those limits; otherwise all that will be necessary for the carrier to do is to set up any or all of those things, and you would be shut out of court as to your contention. If the carrier attempts to limit that notice to thirty days, then there is no contract, and you are not required to give the notice at all.

Now, there is a further provision in connection with that which almost, as it seems to me, shuts out the carrier from any advantage. This is somewhat qualifying what I said, and in order to submit it in the best language possible, I will quote it:

"Provided, however, that if the loss, damage or injury complained of was due to delay or damage while being loaded or unloaded, or damage in transit by carelessness or negligence, then no notice of claim nor filing of claim shall be required as a condition precedent to recovery."

That would not affect the question if they introduced it in their contract, as I understand it. These are opinions, because there are no adjudications upon this act so far as I know. It was passed in August, 1916, so that the United States supreme court would hardly get to it in this space of time, and we can only give opinions, which can not possibly be authority on the question, because they are not backed up by authority. But there is this to be said about that final clause, that there must be negligence on the part of the carrier if there is a basis of recovery at all in the question of live stock. If the carrier is shut out as to notice of claim and the filing of claim on account of his own negligence, the shipper is practically protected on those grounds, and even if he fails to give notice within ninety days, or to file the claim within four months, when that is incorporated in the live stock contract, then the chances are that he still has his day in court, because the loss would in all probability be due to the act of the carrier or its agents. But it will be an unsafe proposition for a man to depend on that; if it is in the contract, it is just as well to comply with it. I would suggest that if the contract called for thirty days, even if it was in violation of the law, thirty days would be a reasonable time; not because I think that such a clause in the contract would be enforcible under this amendment, but for the very reason that you can't be too prompt in filing claims. It is no use delaying the thing as long as you can, and it is possible that if you have someone do it for you, it will be overlooked. There will be the other reaction that it will render the carrier a little more vigilant in handling live stock freight.

In reference to the filing of claims, there are one or two suggestions: First, that of promptness; second, when there is a notice of claim filed, it is always well enough to protect yourself by a sufficient claim; there is no very great danger of your getting too much. The amount can easily be cut down, but it is a very difficult matter to raise a claim, and the chances are that in the first consideration of the matter you may have overlooked some of the damages to which you are entitled. Then, that claim ought to be based upon very carefully recorded information. The trouble with most people (and this is a general trouble, not peculiar to any class of business men) is that we don t preserve our information in such a fashion as will enable us to present it in the best form. In my experience in going over the evidence with clients and witnesses, I have never been able to get in the first interview, however protracted, all the evidence that they were capable of producing. I have found that on going over the matter with them the second and even the third time, there are always matters that will be developed and information of vital importance to the case, that they have not appreciated before. That is one reason why it is very necessary that the amount claimed should be liberal rather than conservative, because it can be cut down.

There is another question as to what damage a man is entitled to. I have had quite a large number of questions submitted by farmers, both in writing and in personal interviews, as to the damage to which they are entitled for breach of contract or some wrong that has been committed against them. Generally they have an idea that they are

There is one foundation principle on which damages are predicated entitled to some damages simply because it is the result of an injury. when it is a matter of contract—as to whether those damages were within the minds of the parties or reasonably within their contemplation when they entered into the contract. That can be applied to every contract. You can conceive of innumerable cases where damage is caused that the carrier could not have had in mind, and those damages are regarded as speculative. As to proper claims for damage, I don't know that it is very necessary for me to go into them in detail. I suppose the two principle things are unreasonable delay and negligence in handling, causing a loss in market. If there is any unreasonable delay in the handling of cars, there is certain damages that may result there. It may be necessary to hold the stock for a longer time than reasonable, and there is an expense there on account of which the shipper is entitled to recover. These things are matters that apply to particular cases.

I believe that covers practically the situation in general. Particular cases are a matter for individual treatment, but if the liability is based upon the carrier's negligence, it is a matter that should have prompt attention, there should be a sufficient amount demanded, and in going over the question every form of damage should be considered, every form of injury that the shipper has suffered, and then those forms of injury should be determined in the light of what was contemplated by the parties when the contract was entered into.

Mr. Eisele: In the case of cattle or hogs that are on the road to market or bought in the country, and have been out the limit of thirty-six hours, and been unloaded, I have paid bills of from $2.50 to $10.00 a car, and all the information I could get out of it was simply that it was for feed and water. My experience is that once in a while they get water, but I have never had any assurance that they had feed. I know I have found my cattle when they did not get any feed, and I was still charged for it, and had no way of running it down. There seems to be no law along that subject. I can get them unloaded in the yards, and they are fed so much hay, and charges made for it; but when they are unloaded at one of those side yards, you never can find out anything, only that they have feed and water, and the bill is just what they have a mind to put in.

Mr. Mitchell: It would seem to me that that is liable to be a question of fact. I don't know whether there have been any statutes enacted attempting to reach it, but it is a question whether that can be proved. The individual shipper would no doubt find that it would cost him a great deal more to test it than to pay the charges, and that is where the carrier has the advantage. There is no question as to the possibility of abuse, but whoever claims that would have the burden of proof, as in practically every other case where the claimant has such a burden, and if it could not be established it could not be collected.

The President: The next number on our program is by a man who has steered us in a legal way in our rate matters for the last ten years. I suppose we are more interested in him than in any other man who appears before us, and rightly, too. We rather feel that Mr. Thorne is one of us, and that he belongs to us, and we owe a great deal to his ability and what he has done for us as an organization, and the winning that he has made in these great rate fights before the Interstate Commerce Commission. So without any further preliminary remarks, I am going to introduce to you the Hon. Clifford Thorne.

ADDRESS OF HON. CLIFFORD THORNE

I am always delighted when I have the privilege of coming before the Corn Belt Association. You men, Mr. Sykes and Mr. Wallace, have been closer to me than any group of men with whom I have come in contact, outside of my own folks. When any crisis has come up, politically or in business, you men have stuck right to me. It is something that I am mighty proud of.

At this moment war is uppermost in the people's minds. It seems that every one who gets up to talk, talks war. The two editors of Iowa's greatest papers last evening talked war chiefly. I would like to discuss war, and I am just going to give a few little statements in regard to it, and then proceed to other matters. I feel we scarcely realize as yet what it is going to mean to us. We are just on the outside edges of the war. A few months ago, I heard an English gentleman in Chicago discussing the effect of the war on English industries. The government had reached out and taken possession of factory after factory. Industries that had flourished before the war were completely paralyzed, and other had grown to a fabulous extent. The government had exercised functions which the conservative men of England never dreamed it was possible for conservative old Great Britain to adopt. They had been accused of aping Germany in their methods. His reply to that criticism was a parable:

One time there was a person in Canada who appeared on the street without sufficient clothing to correspond with the requirements of the law. A policeman started out after him. It was a hot summer day. The fellow gave a pretty good chase. The policeman threw off his hat, his coat, his vest, and it was not long until he was in the condition of the man whom he was chasing.

He gave one other illustration concerning the political developments. Lloyd George, before the war, was a radical—a progressive. The conservative element in England regarded him as socialistic in tendency, and would have nothing to do with him; they hated him. In order to show the attitude of the people, he told this story:

One day a man was drowning in a stream on the edge of a little town. A gentleman was passing along the highway, and, seeing the fellow drowning, jumped in and saved him. Then the little town saw an opportunity of getting a lot of free advertising, so they had a public meeting and a testimonial in honor of this wonderful deed of this prominent Englishman, in saving one of their local citizens from drowning. In due time the gentleman was called upon to respond, and he said:

"Why, folks, I don't see what all this hullaballoo is about. I did nothing more than I ought to do. I saw this fellow out there, drowning in the river, and I jumped in, turned his face up, found it was not Lloyd George, so I saved him!"

When Lloyd George became the head of the British government, he proceeded to select among his advisers the most conservative men in England; only one or two of these men represent the radical and the liberal elements.

In this country we have not yet felt the touch of the war as it must inevitably come. A few weeks ago I saw a little pamphlet, evidently issued by some department of the government, seeking to encourage the purchase of Liberty bonds. This little pamphlet said that during the coming year the United States government will probably require twenty billion dollars for war purposes. The total income of the citizens of this nation is estimated at approximately forty billions. In other words, every person, on an average, during the coming year, will be expected to contribute one-half of his income to the government for war purposes, either through the purchase of bonds or the payment of taxes. Think what that will mean to you—to everybody with whom you come in contact. This money that has formerly gone out into all avenues of industrial activity will now be concentrated on the war. Consider how that will affect the various industries of our nation. At this time we are warranted in taking all necessary steps to see that organized business does not force an unwarranted tax burden upon the American people. We are not only serving ourselves in protecting our just rights, but we are helping our government to prepare efficiently to meet this great emergency which is facing America.

While the war does constitute an interesting topic for discussion, and is uppermost in our minds, there are other economic and business questions confronting us from day to day, just the same as they have in the past, and as they will in the future. I am going to discuss some of these concrete propositions. You people have employed me as your attorney, and I am going to make a sort of report to you of the activities in which I have been engaged during the past year.

You people are not directly concerned in the revision of Iowa interstate freight rates on class traffic; I have kept you in touch with it from year to year, however. Six years ago, as you know, I made a campaign for railroad commissioner, on the ground that our interstate freight rates should be revised, and that fight has been waged from year to year. We have secured this concession and that concession, and finally during the past year the Interstate Commerce Commission, on re-hearing, placed the upper Mississippi river crossings not only on an equality with St.

Louis on traffic from the Atlantic seaboard, which I reported to you last year; but put the upper Mississippi river crossings on an equality with St. Louis on traffic from all territory between the Indiana-Illinois state line and the Atlantic seaboard, wherever the distance is the same and the rate the same, adopting strictly the distance basis—a principle that Iowa has championed in the past, and one that will lead inevitably to the greater industrial development of our state.

The commission also revised the proportionals west of the Mississippi river into interior Iowa towns, grouping them on the distance basis. These cases are now concluded after a six-year struggle. Last year I stated to you they were concluded with the exception of two phases which I have just outlined to you, and they have finally been decided. Our position has been completely sustained by the Interstate Commerce Commission after a long, hard fight. It required at least a dozen hearings before the commission.

The number 8,436 is the one referring to the general investigation of live stock rates, rules and practices thruout the United States. The case was set down for hearing two years ago, but we have not yet had one hearing on it.

Last year, and several months prior thereto, I told you that it was my judgment that the Cummins amendment relieved you of any necessity of declaring values; that rates based on values were unlawful. I read to you from a conference report of the commission to that effect. I now have in my hand a decision rendered November 28, 1917, a couple of weeks ago. Before I read the sentence that I am going to, I want to just refresh your memories in regard to this.

Iowa many years ago passed a law to the effect that you could not by contract limit damages for negligence of a carrier. The law was held valid as applicable to interstate traffic, but in the year 1910 congress passed a law undertaking to cover the subject of damages. The railroads then insisted that they could make a flat rate for ordinary handling of live stock, and increase that 25 per cent or a given amount for any increase in values. In other words, they sought to base freight rates on the value of the article, and to limit their liability. Under that plan, if you did not state the higher valuation of the stock, and it was lost, killed or injured, the railroad was relieving itself from liability for the payment of the full value of the animal. The supreme court of the United States upheld them in the Kroninger case, in 1913. We applied to the Western Classification Committee for a modification; we applied to the Interstate Commerce Commission, and we applied to congress to change that situation. Three courses of action were outlined at the start in the way of appeal. The Western Classification Committee turned us down cold. The Interstate Commerce Commission turned us down. Congress passed the Cummins amendment, forbidding a carrier from limiting its liability in that manner. The railroads then sought to interpret it in another manner; the Interstate Commerce Commission again sustained them in their interpretation. The Cummins amendment was again amended so as to make it very clear, and after that last Cummins amendment we have consistently taken the position that any such rate is unlawful. The matter went to the Interstate Commerce Commission informally, and they made an informal ruling. We now have this formal ruling from the commission:

"Since the hearing was had, we have decided that in view of the amended Cummins amendment, we can not authorize or sanction rates on ordinary live stock which are dependent upon values."

The most important matter of the year was the 15 per cent case. The railroads, as you know, last spring asked for a general advance of 15 per cent on all freight rates in the United States. We have had 10 per cent advances and 5 per cent advances in the past, applicable to a section of the country and to the country as a whole, but 15 per cent was the largest that we had ever faced. Fifteen per cent meant approximately $360,000,000 based on the earnings of year before last, and about $400,000,000 based upon the earnings in the fiscal year 1917—more than $1,000,000 every day. It was the largest amount involved, of course, in any proceeding between private parties before any human tribunal in the history of civilization.

The Interstate Commerce Commission last spring denied the advance on live stock, grain and other commodities in the eastern districts, but granted the advance on class traffic. They denied advances on everything but coal and coke in the west and south. The commission denied altogether the advances on approximately $750,000 a day.

Scarcely had the decision been rendered when it was rumored that the railroads were going to seek to force the advance on commodities. Two or three hearings were held. Altogether there have been, I believe, six hearings since the decision of the commission. The last was on a formal reopening of the entire case so far as the eastern railroads are concerned, and a few weeks ago the western railroads announced that they were going to ask for a rehearing. The western railroads last Saturday withdrew their application for the present, and the hearings have been postponed indefinitely.

This case has been something worth while to you. I presume a fair estimate of the live stock going from Iowa to Chicago is something like 100,000 cars, which, at $40 a car, would be $4,000,000, and 15 per cent of this would be $600,000. Probably, considering the traffic intrastate, and then the movement to Kansas City, Omaha and St. Louis. it is safe to say that the saving is three-quarters of a million on live stock alone in Iowa. The saving to Iowa so far as all traffic is concerned would probably approximate $10,000,000 annually—more than enough to run the state government.

There have been some of the grossest, most unfair misrepresentations of the facts in regard to the earnings of the railroads, during the past few months, that I have ever read at any time, anywhere. If there is any man in this room who doubts the wisdom and fairness of our position in regard to these railroads earnings, I want him to carefully follow my statement of a few facts from the exhibits that I have here on the table.

I want to state to you the position that we took at Washington. I did not have time to come out here and counsel with you; we had to take out position immediately. If we took an erroneous position, we want you to so state; if it was correct, we want you to support us. There is one thing true—you and I are both working for the same object, and if we are possessed of the same information, our conclusions are apt to be the same. I had no ax to grind except to serve you people, and I knew that you did not want to be unfair to anybody. We took the position that there was no emergency in railroad earnings, but that there was an emergency in the financial markets of the United States. We want more cars; we want better terminal facilities. This means the investment of additional capital. Where shall it come from when the financial markets of the country are practically closed to industrial investment?

We took the position at first that during the period of the war we favored government operation of American railroads; second, in lieu of that we favored a government loan. If the railroad revenues are adequate, why should we take that position? I want to frankly and freely discuss these facts with you and see whether our reasoning is sound.

The railroads immediately adopted the suggestion of a government loan. President Rea, on the witness stand, was asked if it was possible to secure the needed money for cars and engines by the sale of securities on the market. In a letter which has just been written by the railroad board to Senator Newlands, which appeared in the papers of yesterday morning, the railroads completely reversed their position. President Rea's statement was made under oath on the witness stand. It was immediately supported by the leading financial and news publications of the United States that are friendly toward the railroads. It was followed up by a request from the railroads for a loan of at least a billion dollars a year. And now, within two weeks after that position was taken, they announce that they don't want any government loan; that they couldn't use the money if they had it. Somebody has made a mistake somewhere.

Mr. Rea is president of the Pennsylvania Railroad System, which is the largest railroad in the world. It handles one-fourth of the traffic between the Mississippi river and the Atlantic sea-coast. President Rea is a broad-gauged, big man in every sense of the word. He is a statesman first and a railroad official second.

Now, as to whether the financial markets of the country are open to securities, listen to this statement from President Rea on the witness stand:

"Mr. Thorne: Yes, but at the present time, is it your judgment that the railroads, or any other class of industrials or public utilities, would be able to sell securities at a reasonable rate, whether this advance is granted or not granted?

"Mr. Rea: I would answer that more positively by saying that they should not come into the markets while the government is trying to secure money to prosecute the war?

"Mr. Thorne: And that answer holds whether this advance is granted or not granted?

"Mr. Rea: It does.

"Mr. Patterson. Later, is it or is it not going to be absolutely necessary, when the time comes, to make all of these improvements out of earnings, and to reimburse the treasury by the sale of securities when they are available?

(And that was one proposition, that they could build these improvements out of earnings, and then later they were going to capitalize the improvements so constructed.)

"Mr. Rea: That seems to be the only means at present, the government practically and necessarily closing the financial market to all other financing.

"Mr. Patterson: Have these improvements on the Pennsylvania System, or any part of them, got to be made, or do you propose to sit still here for the next year or two years? What will happen if you do?

"Mr. Rea: We would choke up and have to stop business. You see what is before us. There is $103,000,000, every cent of which ought to be expended gradually and as soon as possible."

If you are going to have to secure that money and you can't do it by the sale of securities, there are three methods left to you. One is to advance freight rates; another, a government loan; third, government operation. What are the advantages and disadvantages of those three methods? We are now talking about capital charges for the building of betterments and improvements. If you advance freight rates for the purpose of building betterments and improvements, the railroad company owns the improvements, doesn't it? The railroad company will demand a return on what it owns, won't it?

We are right now in the midst of a valuation of American railroads as a basis for charges for all future time. You will be building railroad property for a private company, and then you will have to pay a return on what you build. It would be just like Mr. Sherman here wanting to build a factory. I furnish him the money, and then I will have to pay him a return on the money that I furnish him. Isn't that sensible? A second method would be a government loan. I furnish Mr. Sherman the money, but he has got to pay back to me annually the cost of that money, and at the end of that period I get the principal back. By the advanced freight rates not only do I fail to get annually the cost of the money, but I have to pay him the cost of the money, and at the end of the period I don't get the principal back. Which is the better economic policy of the two? Which is the fairer? In these public matters you must exercise the same horse sense that you do in private affairs.

There are some difficulties about the government loan that I want to outline briefly. Are you going to lend money to various companies without absolutely controlling how it shall be expended? Are you going to lend to bankrupt roads? Are you going to exercise a control over them to see that they are handled properly? And again, if you can't get cars and locomotives, wouldn't it be very wise to have a sort of unification of the railroad systems, so as to cut out competitive service? There are practical difficulties in connection with companies eliminating competitive service. Suppose you and a crowd of men owned one railroad, and I and another group of men owned another, and were running trains in competition with each other. Then it was proposed to eliminate one of our trains, and let the other road handle the traffic. Wouldn't I object very strenuously to the elimination of my train? Why? Because I would not only lose the returns that I was formerly getting, unless there was a pool established, but I would be losing traffic. People would get into the habit of sending traffic over the other railroad, and I would have to commence all over again to get it back. The same is true of terminals. The company that loses the terminal, while its competitors are getting the use of it, is losing something tangible in the shape of business which it has had in the past and wants to maintain in the future. Here and there they will eliminate competitive service, but when it gets down to a fundamental, systematic unification of our railroad system, you see it will be very difficult to secure adequate results under private operation. You appoint a railroad dictator, and he commences taking off the service from one railroad, and substituting another one—how long will he be apt to hold his job under private operation?

There are certain advantages of government operation during the war; I am not speaking of government ownership. We are now sending thousands of engines and cars to France and Russia. One great factory, I understand, is sending eighty per cent of its output to Europe by the direction of the United States government. Now there is a balancing of respective needs. It is necessary for us to operate our transportation system efficiently, as well as it is for France or Russia.. We are entitled to and must have some of the equipment, while those countries must have some. The government would be in a better position to determine the relative needs in Europe and America, and consequently to direct what portion of the cars and engines should stay in the United States and what portion should go abroad, if it was operating the United States plant. There are great advantages in standardization. One celebrated manufacturer of automobiles, it is stated, has been successful chiefly because he has adopted one standard type of machine, and the manufacture of the parts so standardized that they can be distributed all over the country far in advance of their use, eliminating the necessity of construction of new machinery constantly. Would it not perhaps be well to similarly standardize the type of car and engine and other facilities, one railroad not dictating a different type from another?

Another reason in favor of government operation is this: England has learned the wisdom of preventing one additional burden being placed upon her citizens during the war. Within one day after England was in the war, she took over the operation of the railroads. The annual dividend rate on the principal roads of England is less today than it was before the war, with only a few rare exceptions. The average annual dividend rate is approximately the same or less. The reason why it is less is because they took the average of several pre-war years, if I am correctly informed.

If you have private operation and private credit, in order to compete with the money market of the world when the rate of money is constantly climbing skyward, you have to advance those interest rates and those dividend rates in order to get the money for these needed improvements. But if the government secures the money and controls the expenditures, the government can secure the money at a less rate than the railroads could, even before the war.

I would like to ask (not committing yourselves to government ownership) how many in this audience favor the proposition of government operation during the war? Please hold up your hands. (Everybody apparently raised their hands.) How many are opposed. (No one held up his hand.) I believe the record should show that unanimous. I would like to ask, if government operation is not practical, or is not accepted by the powers that be, how many would favor a government loan to an advance in the freight rates? And how many are opposed? All but two in the room are in favor of the government loan. (These two later changed their vote, not having understood the form of the question.)

Gentlemen, I am mighty pleased to know that you have sustained our position. It was absolutely the most critical moment in the history of the American transportation system and we had to act quickly; and we have not found it necessary to reverse our position, as the railroads have.

Now I am going to talk to you in regard to whether the railroads need more money for operation, and I am going to review these exhibits briefly. I have here facts which can not be successfully controverted by any man in the United States, whether he be railroad president or commissioner.

First I have here an exhibit in which we have traced the earnings and expenses of the American railroads as a whole, and it shows the net revenue for the fiscal year 1917—ending June 30, 1917—was greater than in any other year in the history of American railroads. If that has not sunk in on your consciousness, I wish it would, and then when anybody tells you that net revenues have been going down, you can tell him that he is a liar. The net revenues of American railroads in the fiscal year of 1916, as that exhibit shows, were $300,000,000 greater than in the previous year, and $200,000,000 greater than in any other year in the history of our railroads. The fiscal year of 1916 was the most phenomenal in the history of the United States. In the eastern district the net revenues in 1916 were $460,000,000 approximately. That is $120,000,000 greater than in 1913, which was the next largest year. That is almost 40 per cent greater than in any other year in their history. These were the net earnings on railroads serving almost half of the nation, so far as mileage and population are concerned. That was a phenomenal year, a "peak" year. You can't have peak years every year. There wouldn't be such a thing as a peak year if you had one every year. There is an upward and downward tendency in the revenues of every business and every factory on this wide earth. In the eastern district, the fiscal year 1917 showed a larger net revenue than any other year in the history of the railroads with the exception of 1916; and every month since the ending of the fiscal year 1917 has shown a larger net revenue in the eastern district than the corresponding month of any previous year in their history back of 1916, the phenomenal year.

Now, if there is any man in the room who questions these statements, I would like to have him step up here and look at the exhibit. It has not been attacked from any source; it is true.

I have here in my hand an exhibit offered by the railroads themselves in the eastern case, and I just want to show you that according to their own exhibit, in which thirty-eight railroad systems have consolidated their figures, the net operating income of 1917 for the fiscal year ending June

30th was $406,000,000, which was greater than in any other year in their history except 1916; and they made on the capital stock outstanding, water and all, big and little, during the fiscal year ending June 30, 1917, over nine per cent. That looks as tho they are facing bankruptcy, doesn't it?

Mr. Dawson: I would like to ask if the war excess profits tax is taken account of in those figures.

Mr. Thorne: I can answer you very positively that some of the roads deducted it and some of them did not, but none of them ought to have done so. What is the sense in an excess profits tax being deducted in order to find out their profits, and whether they are entitled to an advance in freight rates?

Mr. Dawson: What I wanted to get at was whether there would be anything left for the upbuilding of their roads after these excess profits taxes were taken away from them.

Mr. Thorne: The law is so framed that they can put the surplus back into the property. You will find that these railroads in the eastern district made enough last year to pay all their operating expenses and all of their taxes, estimating all of their taxes for this year under the laws of the country, to pay all of their interest on bonds and debt, to pay all their dividends, and to put $39,000,000 into betterments and improvements; and they had $145,000,000 unappropriated surplus left over. Now, if they were not maintaining their properties properly, what is the reason? Why didn't they expend the $145,000,000 that was unappropriated surplus above all expenses and taxes and everything else? And the previous year they had $147,000,000. Those two years showed the largest unappropriated surplus in the history of the eastern railroads. They are going into bankruptcy mighty fast, aren't they?

I have here a statement showing the situation on the roads that handle two-thirds of the traffic in the eastern district. I want to read the individual roads to you, so as to show how terribly poor and poverty-stricken they are. I heard somebody say last evening that we are too hard on the railroads; that the Burlington Railroad is financially embarrassed. Last year the Burlington Railroad made about 26 per cent on its capital stock. They paid their regular dividend of 8 per cent and then on top of that they paid an extra dividend of 10 per cent. Poor old poverty-stricken Burlington! But here are the eastern railroads.

The Bessemer and Lake Erie earned 29.23 per cent on its capital stock, and 9.45 per cent on its alleged property investment, which is the book value. I have talked to you before about that book value and property investment. You know how your book value can be adjusted up and down. The Interstate Commerce Commission, in 1907, said that no court or commission or accountant of any standing in the country would claim that it had suggested even a remote degree either the original investment or present value of a railroad property. Since then they have kept that figure in a better manner, but every figure today has all the errors in it that were there in 1907; they did not revise the figure. Not only that, but it has all additions and betterments out of surplus since 1907. The Pennsylvania system alone has put $350,000,000 out of earnings into its property in the past ten years; Mr. Rea admitted it on the witness stand under oath. During the same time they have only put in $150,000,000 out of the sale of securities. In other words, the American people have built over twice as much of the property of the Pennsylvania Railroad System as the owners themselves have built. In addition, they have paid an annual dividend of six per cent, and Mr. Rea said that was a reasonable amount.

Mr. Dawson: Are all those betterments capitalized as they go along?

Mr. Thorne: They are put into property investment, so-called. Property investment is the figure that is being urged by the railroads as the basis of their advance, and they are trying to get it all in as now being appraised by the Interstate Commerce Commission.

Let me state what other large eastern railroads earned last year. Here is a table which tells the story:

	Per cent of earnings on capital stock	Per cent of earnings on book value
Central Railroad of New York	19.31	9.45
Delaware and Hudson	9.44	5.81
Delaware, Lackawanna and Western	22.09	7.97
Lehigh Valley	11.42	5.05
New York Central	15.00	6.55
Norfolk and Western	14.64	9.53
Pennsylvania Railroad	11.31	5.70
Reading Railroad	13.55	9.51
Chesapeake and Ohio	12.73	6.54
Buffalo, Rochester and Pittsburgh	10.93	6.14
Lehigh and New England	13.76	8.80
Rocking Valley	19.92	7.38
Lehigh and Hudson River	28.26	8.33

These roads as a whole, handling 72 per cent of the traffic in the eastern district, made 13.88 per cent on their capital stock and 6.68 per cent, or almost 7 per cent, on their book value last year. There are poor, weak sisters in the eastern district, but are you going to advance freight rates in order to help the roads handling approximately one-fourth of the traffic? If it is necessary to operate those weak sisters, a government loan would be far better.

I have here an analysis of the earnings month by month. It shows what I stated a while ago. We prepared these and had the exhibits photographed. Here is another monthly statement showing that their net revenues were greater each month since June 30, 1917, than during any other year in their history except 1916.

Now we had this interesting development last spring. The Interstate Commerce Commission made an estimate of what the net would be for this year, and the railroads made an estimate, and we made one. The commission, with those facts before it, rendered a decision last spring. The Interstate Commerce Commission adopted a certain method of estimating the net income during the balance of the year. I will not take the time to describe the basis; I will simply make this statement to you: Using precisely the same basis, the operating income per mile of line (above all operating expenses and taxes) during the five months subsequent to the months for which the commission had the figures, has been 19 per cent greater than the commission's method of estimate shows. We made two estimates. The net revenues during the first nine months of the year were $10.000,000 greater than we estimated for the entire twelve months on one basis, and $10,000,000 less than we estimated on the other basis for the twelve months.

But now I come to the prince of guessers. I have here a little exhibit labeled, "A Twentieth Century Prophet." I have in front of me photographic copies of the brief filed before the Interstate Commerce Commission last spring. Mr. Patterson, chief counsel, adopted this method of estimating. He used the revenues of last year, and the increased expenses of this year. That creates an imaginary year that does not begin anywhere or end anywhere. We maintained that such a method of estimate was fallacious; that if you are going to estimate the increased expenses, you ought to estimate the increased earnings. Either you ought to adopt the earnings and expenses of last year, or adopt the increased earnings and expenses of this year. If you are going to guess expenses, guess earnings. His proposition is an imaginary one. He states in this connection:

"It must be remembered that the increases in revenue and expenses are both an estimated annual amount based on the business of 1916. They plainly show the financial situation of the carriers, altho they are not necessarily the figures for the year 1917, as some of the expenses and revenues will not be effective for the entire year 1917, in fact, the 15 per cent advance on merchandise and other commodities can only become effective on July 1, 1917, while the higher basis of operating costs has not yet become fully effective."

Here are the exhibits. There is a photographic copy of one page of Mr. Patterson's brief. He said that if they did not get any advances during 1917 their net operating income for this imaginary year (I don't think it is entitled to be called any year) would be $215,000,000.

Now, folks, we were fortunate in having during the rehearing another exhibit prepared by this same prince of guessers. In this exhibit Mr. Patterson showed the net operating income for the first nine months of 1917 to be $283,000,000, in other words over $68,000,000 greater in nine months than he estimated for twelve months. It is true that there were about two months of advances in those last figures. Those advances granted would approximate about $16,000,000 during that period. In other words, allowing for the advances, the actual returns showed a net operating income for the eastern railroads more than $50,000,000 greater than Mr. Patterson estimated for the entire year.

Now with the actual returns exceeding the estimate of the Interstate Commerce Commission, exceeding the estimate of the shippers, and exceeding the estimate of the railroads, isn't it a most remarkable situation that these gentlemen are able to flood the newspapers of the country with the misrepresentations that you have been reading day in and day out? I want to tell you that for the eastern railroads as a whole that surplus of $145,000,000 and $147,000,000, which I stated a few minutes ago, was arrived at by a computation based upon their own exhibits.

There is this that we must look out for in the future. There will be times when great congestion will come, and there will be unrepresentative emergency periods; and, more than that, it is possible to juggle figures. It can not always continue the way I have been describing. The thing that surprises me is the amazing fact that with that kind of a record at this particular moment, they should have the nerve to ask to further increase the transportation burden upon the American people. But we must anticipate that in the future there will be periods of depression—ups and downs—in the railroad industry, just as well as in yours. Do you make a dividend every year of six to ten per cent on the value of your farm? Don't you have periods of depression?

Let me describe some strange figures. Mr. Patterson was taking the leading part for the railroads, and I wanted to see what the Pennsylvania System had done to their earnings. I had one of our accountants compile a table showing the net operating income of that system during the past ten years. I found that the net operating income above expenses of the Pennsylvania System, during the month of February, 1917, was about one-tenth of what it was during the month of January; about one-tenth of what it was during the same month of the preceding year; and less than one tenth of what it was during the next month. And when those February figures began coming in, President Rea rushed down to Washington, in company with other railroad presidents, and demanded an immediate advance in freight rates to meet the crisis, without any investigation. And a lot of numb-skulls out here in the west and elsewhere said: Yes, give it to the railroads; let them have it; of course we want railroad facilities. They didn't want an investigation to see whether those facts were representative or not. The next month their operating income was over ten times what it was that month.

I looked back over previous years to see whether there was any similar event in their past history. I found one such on one of the subsidiaries in the year 1913—the P., C., C. & St. L. I looked at the annual report of that company to its stockholders, and I found it was because of the flood. There was just one other time in the past ten years when that occurred, and that was in 1914. In February, 1914, their operatng income was less than one-third what it was the preceding month for the whole system (the same relationship for the different parts of the system), and less than one-fourth what it was during the next month. Then I began to look over the record of the 1914 advanced rate case, and I found it was just when those figures were coming in that the railroads demanded an immediate advance in freight rates without time for argument or brief. They didn't want to give me ten days.

Mr. Cockerill: They had resolutions sent to all the commercial clubs in Iowa, asking them to endorse it immediately.

Mr. Thorne: Now, folks, I don't want to say that the Pennsylvania accounting officers are crooked; but it looks rather strange that they can so arrange their accounts, or their accounts show such an enormous falling off in one month, and when those figures come in, they rush down to the commission, asking for an immediate advance without investigation. But there are many possibilities in accounting, especially in maintenance and in apportionment of overhead expenses month by month. Judge Cowan told me: "The temptation is too great. It is just like putting a negro in a watermelon patch and telling him not to steal any melons. The temptation would be too great."

I have here a lot of other exhibits. There is one showing the increase in interest rates in Great Britain to be double what it was before the war. Here is one showing the shrinkage in English securities of about $10,000,000,000. Another exhibit here shows the dividends of the principal English railroads to be the same or less than before the war. Here is another exhibit showing how inadequate maintenance expenses were prior to 1907, compared to the present time. Another presents an analysis of the decline in security values, which shows that the bonds of these eastern railroads since the first of the year have declined less than Panama 3's, a government bond that does not have circulation privileges. Two-thirds of the industrial bonds quoted on the stock exchange have declined more than the railroads' bonds have declined during the same period. Here is a little statement from the Wall Street Journal, showing the decline in prices on railroad stocks and industrial stocks this year as compared with last year. The Wall Street Journal must certainly be considered not anti-railroad. It is disinterested—not connected with the case. They selected twenty representative railroads and twenty representative industrials—and it shows, what? It shows that the decline in railroad stocks has been less than the decline in the industrial stocks. It further shows that the average price on the twenty representative railroads is greater than on the twenty representative industrials.

I simply want to urge upon you to be slow about making up your minds on these things when you read accounts in the newspapers; wait until you have heard the other side. And it is going to be absolutely necessary for you to be on hand with your representatives during the rest of this great war. There is a rumor gradually spreading thruout the nation—you can hear it on the streets, in offices, on the trains, everywhere that big business is getting a strangle-hold on our government; that they are centering at Washington with their representatives; that they are there day in and day out, getting in closer and closer touch with the powers that be. I do not want to say that that rumor is correct. I believe it is not correct; but I do urge upon you that unless you continue to take all necessary steps to prevent it, that situation will develop. It is just as important that the stock shipper and the consumer be there constantly as it is for the railroad stockholder to be represented there constantly.

The President: The question is often asked me, not only by our members but by men whom I solicit to become members: Why is it necessary for us fellows to be organized and appear before the Interstate Commerce Commission in these fights? Should not the Interstate Commerce Commission look after our interests whether we are there or not? Of course I have to explain, if it is within my ability to do so, why it is necessary for us to maintain this organization and to employ Mr. Thorne, and for Mr. Wallace and myself and others to appear before the Interstate Commerce Commission in behalf of the shippers and producers, and defend our interests there. The thought is in the minds of a great many people that it is the duty of the Interstate Commerce Commission to look after our interests there, whether we are represented or not. If you will answer this question, it will go into our annual report, and these people can read it as coming from a man of authority.

Mr. Thorne: We must agree that the Interstate Commerce Commission is composed of men who are honest, and that they have the assistance of able, competent statisticians and experts. My best answer to your question is the one that I have given before. The supreme court is composed of honest men, capable, able lawyers, the best in the nation. But if you had a case before the supreme court, would you stay at home and fail to be represented when the contest came? Did you ever have a case in court? You had confidence in the honesty of the jury, didn't you? They were honorable men. And you had confidence in the judge—a strong, able jurist. And yet what man in this room would be fool enough not to be represented when his case was being tried? The other side is there, looking after their interests constantly; you have got to be there or there will be a biased, one-sided presentation. It is human nature for a man, if he be honest, when he is called upon to act as a judge, to be disinterested and to hear what is being presented, not taking the position of an advocate. But if he is constantly pounded on one side, without hearing the other side, the result is self-evident.

I was talking the other day with a man connected with the valuation of our railroads. He told me about their estimates of unit values of railroad property; how these were prepared by their clerks and assistants, and then submitted to the railroads; and the railroads demonstrated to them, conclusively, many mistakes which they had made. I said: "Yes, they showed you where many of your prices were too low but did they ever show you where one price was too high?" And he couldn't recall one instance. It would be wiser for their purposes if they would show a few cases where the prices were too high; they would make a better presentation of their own side.

I say that it is absolutely necessary, whenever you have a contest with any man before any another man, for you to be present and safeguard your interests just as efficiently and effectively as the other side does. If the Interstate Commerce Commission is able and honest, why is it that the railroads don't stay at home when these cases are being tried? Why are they not willing to trust to this tribunal to see that both sides get a square deal? The reason for representation is just as applicable to the shipper as to the railroads.

After all, money and the dollar are not the most important; it is the man that counts. So far as the present issue is concerned, I do not think the interests of the live stock shipper are greater than the interests of the nation. We are in a great war, and it is vastly more important that the honor and majesty of the American nation shall be preserved in all its grandeur, that the fundamental principles of liberty and representative government shall be maintained thruout the world, than it is that you shall win a given rate case or save so much money. We must be patriots first and business men second. The nation comes first. And in our dealings with each other, it is right for us to protect our interest; but money is not the most important thing; man is the greatest. Sometimes we may have failures and be unjustly attacked, but if we do our duty as we see it, that is the right course to pursue. I ran across a poem the other day that fits in on that kind of a situation, and I am going to read it to you in conclusion. It was written by Rudyard Kipling, and the title is "If":

"If you can keep your head when all about you
Are losing theirs and blaming it on you;
If you can trust yourself when all men doubt you,
But make allowance for their doubting, too;
If you can wait and not be tired by waiting,
Or, being lied about, don't deal in lies,
Or, being hated, don't give way to hating,
And yet don't look too good, nor talk too wise;

"If you can dream and not make dreams your master;
If you can think—and not make thoughts your aim.
If you can meet both Triumph and Disaster,
And treat those two impostors just the same.
If you can bear to hear the truth you've spoken
Twisted by knaves to make a trap for fools,
Or watch the things you gave your life to, broken,
And stoop and build 'em up with worn-out tools;

"If you can make one heap of all your winnings
And risk it on one turn of pitch and toss,
And lose, and start again at your beginnings
And never breathe a word about your loss;
If you can force your heart and nerve and sinew
To serve your turn long after they are gone,
And so hold on when there is nothing in you
Except the will which says to them: Hold on!

"If you can talk with crowds and keep your virtue,
Or walk with kings—nor lose the common touch,
If neither foes nor loving friends can hurt you,
If all men count with you, but none too much;
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the earth and everything that's in it,
And—which is more—you'll be a man, my son!"

The President: You people have seen fit to re-elect me as your president for the ensuing year. You know, or should have some conception of what it means to me, as well as yourselves and I am going to ask your hearty co-operation in this work. I am only human. I am trying to operate a big farm out there in Ida county, and these are war times, and of course I am making a tremendous sacrifice—so don't expect too much of me. I will do the best I can. It certainly would have been in accordance with my desires that you release me this time.

Winter is coming on, and the time for our farmers' gatherings and institutes is approaching. I am not looking for a job or throwing out any bait or intimation that I want to get before the people or "play to the galleries," but if you people want to get a speaker from this organization on your program, I am open for dates. You can take up this matter with your local people, and take up the matter of fixing dates with me by correspondence, if they so desire.

Mr. Thompson: I believe it is possible for the president and secretary of this organization, with the co-operation of the directors, to organize the state of Iowa much more thoroly than it has been heretofore. I will not censure the president, because we know he does get out and hustle; but our directors are our forerunners, and I hope they will take up this work of scattering over the state prominent speakers to bring into line those fellows who do not come into this organization. We can make our organization perhaps a third or a half stronger than it is at this present date. As was said last night, the old members are dropping out. I am one of the seven members who organized this association, in the Kirkwood Hotel, fourteen years ago, and I have never missed but one annual meeting since. There are probably two or three other old members of this organization at this meeting. We hope the young members will take the places of the old ones, but I do think that our directors and president and secretary should make some exertion to place speakers in the field.

Upon motion of Mr. Anglum, the convention then adjourned *sine die*.

EXECUTIVE COMMITTEE MEETING.

At the meeting of the Executive Committee, December 12th, H. C. Wallace was re-elected secretary, and A. Sykes, Joseph Eisele and H. C. Wallace were appointed as an Executive Committee. Mr. Sykes was authorized to employ helpers whenever in his judgment the occasion might justify it. Clifford Thorne was retained as attorney for the year 1918.

PART VIII

Bulletins and Papers of Interest to Farmers and Stock Growers

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CABBAGE DISEASES.

By I. E. Melhus and I. H. Vogel.

Cabbage diseases are the chief limiting factor in profitable commercial cabbage growing in Iowa. The most destructive of these are black-leg, black-rot, and cabbage yellows. Any one may destroy the greater portion of a crop. The first two are known to be distributed with the seed and cause infection of the young plants in the seed bed. Some of these naturally find their way into the field and under favorable conditions become destructive. Cabbage yellows may also be distributed with the seed but is probably more commonly spread with the plants by the soil adhering to the roots.

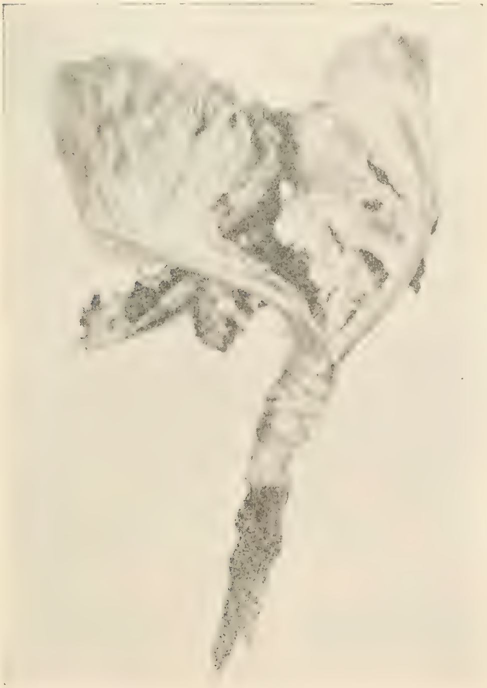

Fig. 1. Cabbage plant infected with black-leg; the disease has girdled the stem.

These diseases may remain alive in the soil for from two to twelve years. The first step in successful cabbage growing, therefore, is to prevent the development of these diseases. In order to do this the seed should be treated and the plants grown in soil free from disease.

BLACK-LEG

Black-leg is caused by a fungous organism whose presence is indicated by sunken spots with a purplish border on the stem just above the surface of the soil. The spots increase in size and depth until the stem is girdled as shown in fig. 1. This may occur either on the seedling or the nearly mature plant. When the infested tissues die, small black dots, known as pycnidia, are formed. on the sunken spots.

The pores are borne in the pycnidia, which enables the disease to live over from one year to the next. These may either remain attached to the old cabbage stumps in the fields or be set free in the soil. The spores may also adhere to the seeds. It is plain, therefore, that infection may come about either thru the infested refuse in the soil or the seedlings propagated from infected seed.

Control. Land that has grown an infested crop should not be planted to cauliflower or cabbage for a period of three or four years. It is well to practice a three or four year rotation and burn all infested cabbage stumps and other refuse. The seed should be treated before it is planted and the seed bed should be on land that has not grown cabbage for many years. If such soil is not readily available sterilize it as described later.

BLACK-ROT

Black-rot attacks cabbage plants in all stages of their development, either in the seed bed or in the field. It is caused by a bacterial organism which gains entrance to the plant thru the water pores at the margins of the leaves. As the disease spreads from the point of infection toward the mid-rib the leaf becomes yellow and the veins black. Infection may also occur from injuries made on the foliage by insects. When a plant is badly diseased the veins in the stem become black. A badly diseased plant under favorable conditions wilts and dies within a few days. Black-rot flourishes when the weather is hot and damp.

Control. Exercise the same precautions as given for black-leg.

CLUB-ROOT

Club-root is not generally distributed in Iowa but has been found in a severe form in one locality. This emphasizes clearly the necessity of guarding against this disease in any given locality. In many places in the east club-root is a serious menace to cabbage.

Club-root attacks only the roots of plants. It is caused by a slime mold that lives in the soil. If plants are attacked when young they die within a short time, while in older plants the leaves turn yellow and wilt. Outgrowths or galls are found on the roots as shown in fig. 2, thus the common name, club-root.

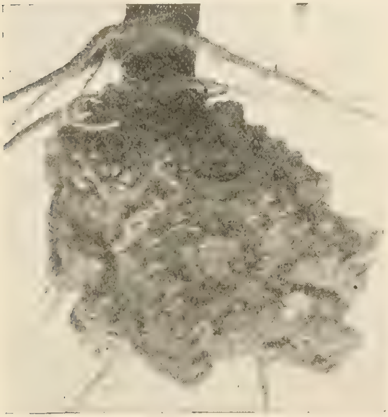

Fig. 2. Root system of cabbage plant almost totally destroyed by club root.

Control. There is a great deal of difference in the susceptibility of the various varieties of cabbage to this disease. The Hollander, Large Late Flat Dutch and Henderson's Early Summer are quite resistant but no variety escapes entirely. When land is infested with club-root it may be controlled by applying 150 bushels of air-slaked lime per acre. This should be worked in the soil to the depth of six to nine inches six months previous to the setting of the cabbage.

CABBAGE YELLOWS

Cabbage yellows is one of the most destructive cabbage diseases found in Iowa and occurs quite commonly thruout the state. Often this disease destroys 95 per cent of a crop. Cabbage yellows is caused by a fungous parasite that can live in the soil for many years once it becomes badly infested. The threads of the parasite gain entrance into the plant thru the roots and finally make their way into the stem and leaves. The parasite interferes with taking up of water by the plant which causes the leaves to turn yellow and fall away as shown in fig. 3. This may take place with the young or nearly mature plants. This disease is most active when the weather is hot, as in July.

Control. A field that has grown an infected crop should not be used for cabbage again for many years. It has been shown that yellows will remain alive in the soil for twelve years. On new land it is advisible to practice a five-year rotation and under no circumstances should two crops of cabbage be grown on the same land in succession. Cabbage plants grown in soil that has been used for growing cabbage several years should be avoided as they are liable to carry yellows. It is also wise for each grower to propagate his own plants so as to run no chance of introducing this disease. Recently the Wisconsin Experiment station has developed a resistant strain of late cabbage known as the Hollander.

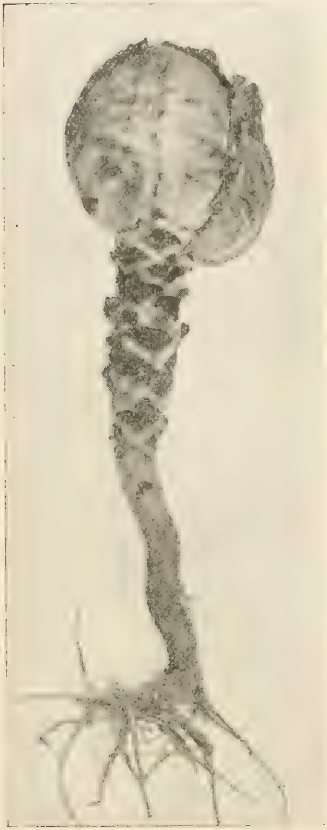

Fig. 3. Dropping of lower leaves caused by infection with cabbage yellows when plant was about half mature.

GENERAL CONTROL MEASURES

Seed. In purchasing seed buy the best quality. It should be of uniform size, hard and plump. Cheap seed is often a mixture of early and late varieties. This is often unfortunate for the man who is growing cabbage for the early market. In addition to being of good quality and purity as to variety, the seed should be free from diseases.

Seed treatment. Such diseases as black-rot and black-leg are carried on the seed. The first step, therefore, in successful cabbage growing is to exercise seed treatment. This is very easily done with corrosive sublimate, sold by druggists as bichloride tablets with directions for their use. Less than five cents worth of this poison will suffice to treat a pound of seed, which will grow enough plants for five acres of cabbage. The formula is as follows:

Corrosive sublimate (bichloride tablets) 1 part or 1 gram.

Water, 1,000 parts or 1 quart.

Soak seed in this solution twenty minutes.

This solution should be made up in a stone jar or a wooden pail because it corrodes metals. Immediately after the seed has been treated spread it on a clean cloth in a warm room to dry quickly. When thoroly dry return the seed to a clean sack, not the same sack from which it was taken before it was treated which may contain spores that will again contaminate the seed.

Seed bed soil. An infested bed is often responsible for a crop failure. After the soil has been disinfected it must be planted in clean soil in order to produce healthy plants. It is well to change the seed bed soil every year; but if this is not possible, as is often the case where the beds are large and of a permanent construction, the soil should be sterilized. For this purpose one may use either steam or formaldehyde.

STERILIZATION OF SOIL BY STEAM

The soil may be steam sterilized by either the inverted pan or the drain tile method with very satisfactory results.

Inverted pan method. This method consists of forcing steam under a large pan laid over the soil. The pan is made of No. eighteen sheet iron ten ft. long, six ft. wide, and six in. deep. The top six to eight inches of the soil should be loosened up with a spade so that the steam can enter readily. When the soil is in condition and the pan is in place steam should be forced into the pan for one hour at 75 pounds pressure. A potato buried 6 in. deep in the soil under the pan may be used as an indicator. When this potato is cooked the soil has been sterilized long enough. The source of the steam may be either a greenhouse boiler, a threshing machine engine, or any other type of steam generating machine carrying a pressure of 75 to 100 pounds.

Drain tile method. This method consists of laying lines of four inch tile in ditches ten inches deep and two feet apart and ridging up over them the soil to be sterilized. The entire surface of the ridge should be covered with canvas or building paper to confine the steam. Steam at high pressure should be allowed to flow into these lines for about four hours, or until a potato buried in the surface soil of the ridge is cooked.

STERILIZATION OF SOIL BY FORMALDEHYDE

This method is very simple and does not dequire a great deal of equipment. It is recommended that a solution consisting of one quart of commercial formalin to twelve and one-half gallons of water be sprinkled on the seed bed with a sprinkling can at the rate of one-half gallon per square foot of soil. Cover the soil with a canvas or heavy paper for twenty-four hours. At the end of this time it should be uncovered and allowed to dry rapidly. It is not advisable to plant cabbage seed in this soil until it has dried out which usually requires a week or ten days in the open. If the seed beds are to be used early in the spring it is desirable to treat the soil in the fall and avoid delay incident to the drying of the soil.

SOIL INOCULATION.

By P. E. Brown

Soil inoculation is the introduction of certain desirable bacteria into the soil. As a practice it is very old, having been followed many years before its beneficial influence was understood. In reclaiming infertile land, the addition of fertile soil was often found helpful, especially for such crops as clover. The practice did not become general, however, until some thirty years ago when the reason for the soil-enriching properties of legumes was discovered.

At that time it was demonstrated that when clovers, vetches, alfalfa, cowpeas and all other legumes are associated with certain bacteria, these crops have the power of taking nitrogen from the air for their growth. It was demonstrated further that if the bacteria were introduced into soil deficient in nitrogen, legumes would grow satisfactorily on that soil and actually increase the amount of nitrogen in it. They not only take enough nitrogen from the air for their own growth, but store a surplus in the soil. Without the presence of the bacteria, however, the legumes do not thrive and they are not able to secure their supply of nitrogen from the air.

It was also demonstrated that not only must the necessary bacteria be present in the soil for this important work of the legumes, but they must enter the roots of the plants and form swellings or nodules there. Thru this means a state of mutual helpfulness is set up, called symbiosis. The plant supplies the bacteria with certain food materials and in return the bacteria draw nitrogen from the air and furnish it directly to the plant.

Later investigations led to the discovery that the nodules on *any* legume contain only one kind of bacteria; they are therefore called "pure cultures." The organisms which grow thus with all legumes have since been found to belong to the same species, and have been named *Bacillus radicicola.* They include, however, well defined strains or varieties, each especially adapted to grow with certain legumes, and it is more or less difficult if not impossible for them to adapt themselves to certain other legumes. Such adaptation apparently does occur *thru long periods of time*, but farm practice demands immediate results and hence the proper species of bacteria must be present in the soil if inoculation is to occur.

WHEN SOIL INOCULATION IS NECESSARY

There is no easy test for the presence of a particular kind of bacteria in a soil. The only way to be positive about the inoculating power of soil is to grow a legume and note whether there is an abundance of nodules on its roots. However, certain facts indicate rather definitely when inoculation should be practiced. In the first place, if the soil is poor and it has never borne a legume crop previously, the necessary bacteria are probably not present and they should be introduced. If one legume has been grown on a soil and has been inoculated, that does not give assurance that the proper bacteria are present for any other legume and inoculation should be made. The bacteria which grow on the roots of certain legumes will not grow on roots of certain others except in one case. Alfalfa and sweet clover do cross inoculate and the same bacteria grow in the roots of both these legumes. Successful inoculated crops of either of these plants will therefore insure inoculation of the other on the same soil.

If a legume has been grown successfully but its roots have no nodules, the soil should be inoculated in order that the plant may secure its proper supply of nitrogen from the air. On fertile soils legumes many times make entirely satisfactory growth without inoculation, drawing their nitrogen from the soil just like other crops.

If a legume made unsatisfactory growth even tho some nodules were found on its roots, inoculation should be practiced. The poor crop production indicates the absence of sufficient vigorous bacteria of the proper kind. Under such conditions growing the same crop for several years would probably be necessary before thoro inoculation would be accomplished.

Inoculation is also desirable when a legume is to be grown again on a certain field after several years of cropping to other plants. How long bacteria retain their efficiency in the soil is not definitely known, but experience indicates that reinoculation is desirable if the legume in question has not been grown for from five to seven years. In the absence of definite proof of the presence of the bacteria in a vigorous condition in the soil it is a wise precaution to introduce them and insure the proper growth of the legume.

WHEN INOCULATION IS UNNECESSARY

If satisfactory yields of a legume have been obtained recently on a soil and the plants carry a large number of root nodules, this indicates that inoculation has been thoro and the introduction of bacteria will be unnecessary. Within comparatively short periods of time bacteria apparently retain their efficiency and inoculation is not profitable, because it will not increase the yield or value of the crop.

METHODS OF SOIL INOCULATION

Soil may be inoculated by two methods: By the transfer of soil from a field where the *same* legume has previously been successfully grown and inoculated or by the use of commercial preparations which are on the market.

The soil transfer method was the first to be employed and its value has been demonstrated in many experiments and in extensive practice. The method followed is to scatter 300 to 500 pounds of the inoculated soil over each acre of the field to be seeded and disk it in thoroly before seeding. Inoculated soil should not be allowed to remain exposed to heat and light but should be mixed with the surface soil immediately for the desirable bacteria are rather readily killed by exposure to the sun.

Certain other precuations should be observed. The *same* legume must have been grown on the soil which is to be used, for cross inoculation between legumes occur only in the case of alfalfa and sweet clover. Further, the legumes grown in the soil used must have been well inoculated as shown by the presence of many root nodules. Also the soil should be free from plant diseases and this may be determined by a careful observation of the crop grown on it. Finally, no objectionable weed seeds should be present in the soil. If these precautions are followed and the soil and climatic conditions are favorable, successful inoculation can be practically guaranteed.

OBJECTIONS TO THE SOIL METHOD

There are, however, certain objections to the soil transfer method of inoculation. If the soil must be shipped any great distance the cost of transportation and spreading will be rather large. If soil that is safe cannot be secured in the immediate vicinity, other methods of inoculation may be more desirable.

The "glue" method is a modification of the soil transfer method and has been advocated as a cheap but effective method of inoculating the seed.* Soil, meeting the requirements mentioned above, is dried in the dark, pounded to a fine powder and sifted. The seed is sprinkled with a 10 per cent solution of glue (one pound of furniture glue to one gallon of water) or with a solution made sticky by dissolving sugar in water and is stirred until each seed is moist. Dry soil is then sifted over the seed in sufficient amount to absorb all the moisture. The seed is then mixed thoroly, screened and planted within a day. Small seeds inoculated in this way must be sifted carefully to prevent clusters from remaining together.

Several questionable features of this method may render it undesirable from the field standpoint. In the first place the glue which is employed may contain substances which will injure the bacteria and reduce their efficiency. Drying the soil before using may reduce the vigor of the organisms and result in only partial inoculation. Exposure to light or high temperatures may kill the organisms or lessen their efficiency. While this method has been used to some extent in certain states no definite comparative results have been secured under field conditions and this station is not ready to recommend it as always reliable. Consequently, if the use of soil is considered too laborious and expensive it would be better to procure a satisfactory, tested pure culture and inoculate the seed. With the present price of certain commercial cultures, less expense and labor may also be involved with more certain returns secured.

PURE CULTURES

Soon after the discovery that the nitrogen gathering power of legumes depends upon the presence of bacteria in the nodules on the roots, it was suggested that pure cultures be used for inoculation, thus avoiding the difficulties attendant upon the use of soil. Pure cultures of the various organisms were secured from nodules and various liquid and solid substances prepared in a sterile condition were found to support the growth of these organisms. Commercial preparations were made and put on the market, but the results secured in practice showed that there were many difficulties to be overcome before inoculation with pure cultures could be made as safe and generally satisfactory as the use of soil. The difficulty has been with the material upon which the bacteria were grown to make commercial "'pure cultures." The bacteria seem to lose their efficiency or vigor when grown on materials containing nitrogen, and when introduced into the soil in such a weakened condition are unable to enter the legume roots. When the plants are very weak inoculation will occur with weak bacteria but if, as is usually the case, the legumes are rather vigorous it is necessary that the organisms be vigorous and active. Then, too, in diluting the cultures before applying them to the seed, in drying and in other steps connected with the actual inoculation, the bacteria are often weakened or killed and other bacteria frequently enter and drive out the beneficial organisms.

To overcome these difficulties, nitrogen-free materials were used and the bacteria grown on these in making "pure cultures." These cultures have recently come into the market and have proven quite uniformly satisfactory. Many of the older preparations have been discontinued or remodeled because of their uncertainty. Cultures are now being prepared by growing the organisms alternately on nitrogen-free materials and on the roots of the particular legume, thus breeding the bacteria up to a high state of efficiency.

The improved method of preparation of pure cultures and the difficulties attendant upon the securing of well inoculated soil in so many cases has made it seem advisable to test some of the cultures now on the market and to compare their value with that of soil.

IOWA EXPERIMENTS

Two experiments were carried out with alfalfa and one each with cowpeas and soybeans. The cultures used in the tests were "Nitragin," prepared by the Nitragin Co. of Waterloo, Iowa; "Farmogerm," prepared by the National Soil Improvement Co., Charlottesville, Va.; a culture prepared by the Bureau of Plant Industry of the United States Department of Agriculture; "Nitrogerm," prepared by the H. K. Mulford Co., of Glenolden, Penn., and soil obtained from a field where the same legume had previously been grown and well inoculated.

A cross inoculation of alfalfa and sweet clover was tested and also an inoculation with soil plus a commercial culture.

These tests were all carried out on one-twentieth acre plots, the first test with alfalfa in 1914, the second on different plots in 1915 and the tests with cowpeas and soybeans also in the latter year. The soils were well supplied with lime in each case and all the precautions necessary to secure a satisfactory crop growth were observed.

THE ALFALFA TEST

In the first alfalfa test the crop was seeded in the spring of 1913 with barley as a nurse crop and the yields obtained the following season. In the second test, the alfalfa was seeded in August, 1914. Three cuttings were made in the case of both alfalfa experiments, but these will not be considered separately here. The total yields per acre in pounds are given for all the crops and also the total nitrogen in the crops in pounds per acre.

The table on the next page gives the results of the tests, both for yields and for nitrogen present in the crops.

This table indicates that inoculation for any of these legumes brought about some increase in the crop growth. There were some variations in the effects of the different cultures on the various crops and in the case of the alfalfa, on the same crop when grown on different soils.

While no definite comparison of the values of the various cultures can be made it may be concluded that all the cultures tested gave uniformly satifactory results. Inoculation with soil was slightly superior in most instances but the differences were too small to be distinctive. In fact, the relative value of the pure cultures and of the soil is so nearly equal that the choice between them should undoubtedly be based on the cost of the cultures and the ease with which soil may be secured rather than on the crop yields alone.

YIELD PER ACRE IN POUNDS OF ALFALFA, COWPEAS AND SOYBEANS WITH DIFFERENT INOCULATION MATERIALS.

	Uninocolated soil	Inoculated soil	Inoculated nitragen	Inoculated farmogerm	Inoculated U. S. culture	Inoculated soil + nitragen	Inoculated nitrogerm	Inoc. nitragen culture of sweet clover
Alfalfa 1914	6413.00	7402.00	6912.00	6988.00	6800.00	---------	7268	7272
Alfalfa 1915	6933.40	7305.40	7283.00	7250.80	6774.80	7583.00		
Cowpeas	5158.00	6938.40	5216.40	4790.80	5179.40	5238.00		
Soybeans	5336.00	6158.00	*4221.60	5198.80	6858.40	*3859.60		

TOTAL N IN CROP PER ACRE POUNDS.

	Uninocolated soil	Inoculated soil	Inoculated nitragen	Inoculated farmogerm	Inoculated U. S. culture	Inoculated soil + nitragen	Inoculated nitrogerm	Inoc. nitragen culture of sweet clover
Alfalfa 1914	160.06	187.04	170.76	176.14	171.88	---------	186.08	170.76
Alfalfa 1915	201.28	221.72	215.90	218.20	204.62	217.72		
Cowpeas	88.26	133.42	116.24	94.12	117.00	121.62		
Soybeans	108.22	156.40	*106.60	141.32	151.84	*114.52		

The cross inoculation of alfalfa with sweet clover proved quite as satisfactory as when alfalfa cultures were used. A pure culture used in addition to soil for inoculation showed some slight effect but not sufficient to warrant the use of a pure culture on a soil already well inoculated.

Inoculation of the legumes increased their nitrogen or protein content as well as their yields. Again, however, the effects of the different cultures are not sufficiently distinctive to warrant a conclusion regarding the relative merits of the various pure cultures and of soil for inoculation. There is apparently a tendency toward equalization between the total crop yield and the nitrogen content. When the crop is larger, the nitrogen content is somewhat lower and vice versa.

These experiments are of value in that they show rather definitely that the particular pure cultures tested gave satisfactory inoculation for the legumes used and partically as good results were secured with them as by the use of well-inoculated soil.

HOW TO INOCULATE

The choice between the two methods of inoculation must, therefore, rest upon the expense and labor involved in their use. If soil is available in the immediate vicinity and can be secured for the labor and expense of hauling and spreading it over the field to be seeded, it is the cheaper and safer method of inoculation. Such soil must of course be secured from a field where the same legume has been grown and well inoculated and where no objectionable weeds or plant diseases have been present. In addition, soil used for inoculation should be disked in at once in order to avoid weakening and killing of the bacteria.

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*Seeded June 8. All other plots seeded May 27. Delay in securing cultures. Crop harvested on same date.

If it is not possible to secure well-inoculated soil in the neighborhood and it must be shipped or hauled from a distance the use of commercial cultures would probably prove cheaper. Satisfactory cultures have recently been placed on the market at a cost of about 50 cents for an amount sufficient for an acre instead of the former price of $2.00, and at such a price they prove less expensive than soil. In large amounts the cost of such cultures is reduced to about 33 cents per acre. With cultures of about equal value with soil available at such a figure, the objections to their use are largely removed. The amount of labor involved in their use is unquestionably smaller. The cultures are merely mixed with a sugar solution according to directions and poured over the seed, which is then dried over night in a cool dark room and seeded the next day in the usual way.

Many commercial preparations are now on the market. Unfortunately not all have been fully tested but those which have been tested for efficiency have proven satisfactory. Before employing any new material, however, farmers are urged to inquire of the Soils Section of the Iowa Agricultural Experiment Station as to its value. Besides the cultures tested in the experiments reported in this bulletin, "Nitragin," "Farmogerm," "Nitrogerm" and the United States Department of Agriculture culture, the culture of "Legume Bacteria" supplied by the Edwards laboratories at Lansing, Michigan, has been tested and proven quite satisfactory. Other cultures are being tested and reports on their efficiency will be available later. Farmers are advised to employ those cultures which may be secured at the least cost, provided they are recommended here or elsewhere by the Soils Section. The relative efficiency of the various cultures thus far tested is practically the same for all and a choice can, therefore, only be made on the basis of the expense involved.

CONDITIONS NECESSARY FOR SUCCESSFUL INOCULATION.

The inoculation of a legume will not insure a satisfactory crop altho when other conditions are satisfactory for crop growth, it will insure the utilization by the legume of the nitrogen of the atmosphere and consequently conserve the supply in the soil. It will also increase the crop yield and the protein content of the crop. General soil conditions must be satisfactory or inoculation will be unsuccessful and the crop will fail for inoculation will not make up for lack of care in the preparation of the soil, in the choice of seed or in the treatment of the crop.

The conditions necessary for successful inoculation are the same as those necessary for the successful growth of the legume. The soil must be carefully prepared to insure proper moisture and aeration conditions, to correct acidity by the use of lime, to remedy plant food deficiencies by the proper additions and to insure good mechanical condition by the use of manure. Then if the seed has been carefully selected and a legume adapted to the particular soil and climatic conditions is chosen, successful inoculation and good crop growth will result.

When all these conditions are met, then and then *only* will inoculation prove successful. With successful inoculation satifactory growth of legumes may be insured and the fertility of the soil increased. Well inoculated legumes should occupy a prominent place in all rotations if soils are to be kept permanently fertile for by their use the nitrogen and organic matter content of the soil can be maintained at a minimum expense.

IMPROVED METHOD OF FIGHTING SMUT IN OATS.

By H. D. Hughes

Any farmer who grows oats may secure a return of from $3 to $6 or even $8 from a total investment of 7 cents, 3 cents for labor and 4 cents for formaldehyde. And this may be repeated as many times as there are acres of oats.

Extensive tests by the Farm Crops section of the Iowa Agricultural Experiment Station over a three-year period, comparing different methods of treating seed oats for the prevention of smut, show very definitely that the time and labor heretofore expended for this purpose may be greatly reduced by increasing the strength of the solution and not making the seed wet enough to necessitate drying before seeding.

METHODS PREVIOUSLY USED

The method of treating seed oats for smut which has been in use over twenty years is, briefly, as follows:

1. Make a solution using one pint (one pound) of formaldehyde and forty gallons of water.
2. Pile forty bushels of oats on the barn floor.
3. Sprinkle the oats with the solution, at the same time shoveling them over until every grain is thoroly wet, using about a gallon for each bushel of oats.
4. Shovel the oats into a compact pile and cover with blankets and sacks for from six to ten hours.
5. Uncover and shovel out into a thin layer a few inches thick to dry.

40 per cent of the heads destroyed by smut.

6. Shovel and turn the oats at least once, and preferably twice a day, until dry enough to seed; the time required depends upon the weather and the kind of seeder used.

7. When seeding, open up the drill to seed about one-fourth more oats to allow for the swollen condition of the grains.

NEW METHOD RECOMMENDED

While the method just outlined has been entirely satisfactory in killing the smut two-thirds of the time and labor it requires can be eliminated by the use of a stronger solution. A solution of one pint of formaldehyde to ten gal. of water (instead of forty gal.) used at the rate of only one quart (instead of one gal. of weaker solution) per bushel of grain will entirely kill the smut without injury to the oats. Since the use of so small an amount does not necessitate drying, the oats may be sacked at once and at the end of about twelve hours will run thru the drill as readily as untreated seed.

After three years of experimentation in the field, with the idea of reducing the time and labor heretofore involved, the following procedure is recommended by the Farm Crops section:

1. Make a solution using one pint of forty per cent formaldehyde and ten gallons of water.

2. Sprinkle the ten gallons of solution over forty bushels of oats, meanwhile shoveling so that the solution is uniformly distributed.

3. Sack as soon as the solution and oats have been thoroly mixed and seed the next morning.

LABOR AND COST

Two men in from two and one-half to three hours can thus treat and sack enough seed for forty acres, or an average of about four minutes for the seed required for each acre. Formaldehyde can be secured at any drug store at from 50 to 60 cents per pint, making the cost per acre from 4 to 5 cents.

ONLY 10 PER CENT OF SEED OATS ARE TREATED TO KILL SMUT

That there is considerable loss from smut each year is well known to everyone who grows oats, the loss in some seasons averaging as high as eight per cent and in individual fields twenty and even thirty per cent. Yet only about ten per cent of the oats seeded in Iowa are treated to prevent this loss, and this in spite of the fact that the value of the relatively inexpensive and simple formaldehyde treatment has been thoroly established and the method is well known. Undoubtedly this is true, largely because the spring months are very busy. If farmers knew of a method of treating seed oats which would not wet the oats to such a degree as to make it necessary to dry them again before seeding and thus save labor and time perhaps more seed would be treated.

COMPARISON OF DIFFERENT METHODS OF TREATMENT

In the spring of 1915 a series of trials was begun to test the value of different solutions made with one pint of formaldehyde each to three gallons of water, to five, to ten, to twenty, to thirty, and to forty gallons of water.*

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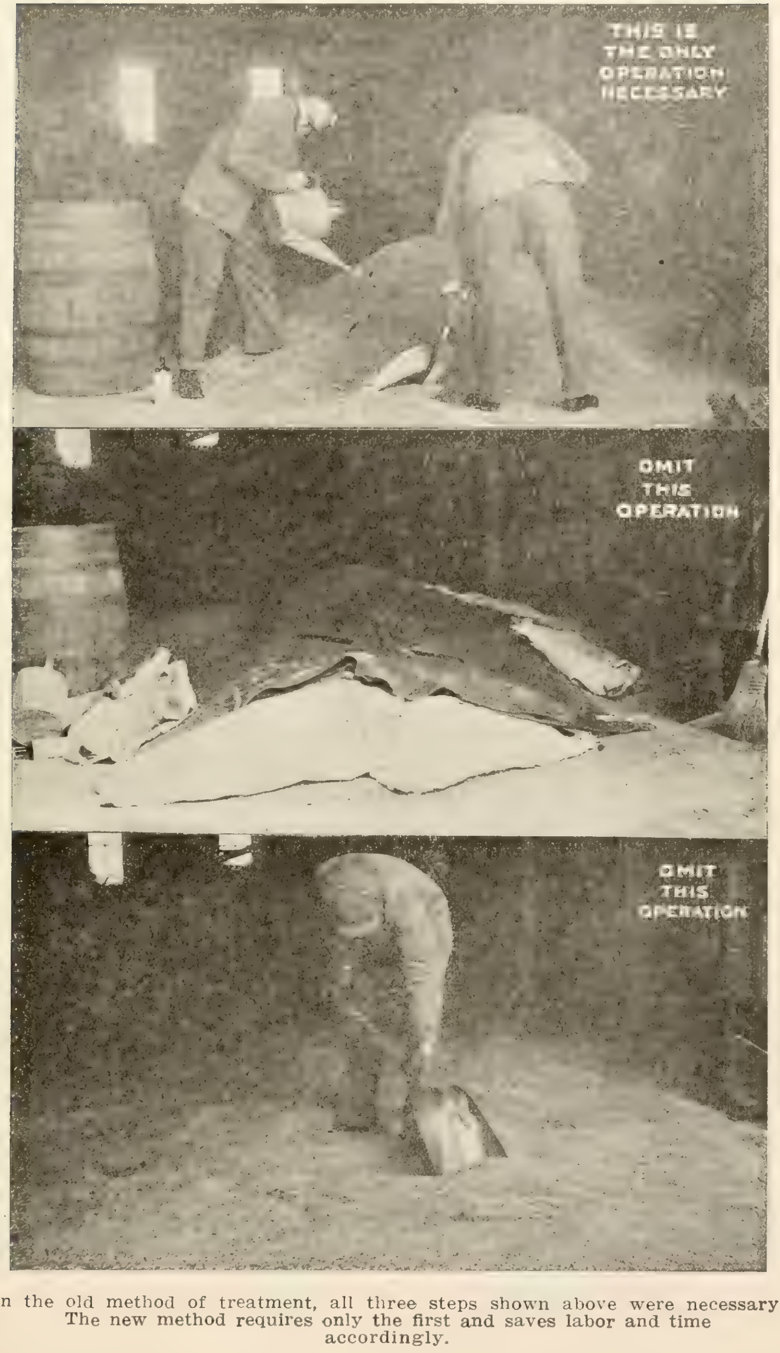
*In these tests the author had at different times the assistance of Messrs. J. A. Krall, M. E. Olson and L. C. Burnett.


THIS IS THE ONLY OPERATION NECESSARY
OMIT THIS OPERATION
OMIT THIS OPERATION

In the old method of treatment, all three steps shown above were necessary. The new method requires only the first and saves labor and time accordingly.

The amounts of these solutions used per bushel ranged from one to eight pints or one gallon. Different lots of seeds were treated with the different solutions and covered for different periods of time ranging from 0 to fourteen hours. Germination tests were made with each lot of seed treated to determine the effect of treatment on the vitality, and plots were seeded in the field to determine the direct effect of the formaldehyde in killing the smut, as well as to determine the yield of the treated seed compared with the same seed untreated. With slight variations these tests were repeated in 1916 and in 1917.

TABLE I—SHOWING YIELD IN BUSHELS PER ACRE OF DIFFERENT LOTS OF SEED OATS TREATED WITH VARIOUS AMOUNTS OF FORMALDEHYDE.

Strength of Solution	Pints of Solution Per Bushel	1916		1917		Average Yield Bushels
		No. of Plots	Yield Bus.	No. of Plots	Yield Bus.	
1 pt. to 5 gal.	2	2	62.5	2	53.8	58.16
--	4	0		2	25.2	
1 pt. to 10 gal.	2	4	73.7	4	66.5	70.10
	4	4	74.4	4	64.5	69.45
	6	4	70.6	4	43.3	56.90
1 pt. to 20 gal.	2	4	70.9	4	61.2	66.05
	4	4	64.9	4	62.7	63.80
	6	2	64.5	4	62.0	63.20
1 pt. to 30 gal.	4	4	73.5	4	67.6	70.50
	6	4	70.1	4	59.7	64.90
1 pt. to 40 gal.	4	4	65.7	4	63.4	64.50
	6	4	61.4	4	62.5	61.90
	8	4	68.6	4	64.1	66.30
Control Untreated Seed	0	7	70.3	6	58.6	64.4

TABLE II—SHOWING YIELD IN BUSHELS PER ACRE OF SEED OATS TREATED WITH FORMALDEHYDE AND THEN COVERED FOR VARIOUS PERIODS OF TIME.

No. of Hours Covered	No. Plots		Yield		Average
	1916	1917	1916	1917	
0	11	11	71.7	59.3	65.5
4	11	12	70.9	64.1	67.5
8	11	11	69.6	62.0	65.8
14	11	11	70.0	62.1	66.0

All of the treatments were effective in killing the smut in 1915 tho the untreated seed showed but slight infection: 1.83 per cent of smut. In 1916 the untreated seed produced 12.7 per cent smutted plants. The use of one to five solution, (one pint of formaldehyde and five gallons of water), also the one to ten and one to twenty solutions, entirely killed the smut as did seven of the treatments with the one to thirty solution. All of the plots treated with the one to forty solution showed a few heads of smut, but in no case did the number approximate one per cent.

In 1917 there was again some smut in each of the plots where the seed was treated with the one to forty solution, but in no case did the smut reach 1 per cent of infection. The plots treated with the 1 to 5, 1 to 20 and 1 to 30 solutions in a few instances showed an occasional smutted head. The total per cent of smut in different plots amounted to .2, .4, .13, .25, and .87 per cent. Not a single smutted plant was found in the plots treated with the 1 to 10 solution. The untreated seed produced plants with 11.5 per cent smutted heads.

The solution made with one pint formaldehyde and ten gallons of water is recommended for use, not primarily because the largest yields was secured from this treatment in 1916 and the next to the largest yield in 1917, but because the required amount of formaldehyde can be applied in this solution to kill the smut without wetting the oats enough to make drying necessary.

Repeated trials have shown that twelve hours after the oats are treated with the 1 to 10 solution, they will run thru the drill as rapidly as will the untreated seed, and this is secured when the oats are sacked immediately following treatment.

No relation was found to exist between the number of hours that the seed was covered and the killing of the smut or the yield in the field.

ANTI-SMUT COMPOUNDS

In the spring of 1917 certain anti-smut compounds, under various names, were placed on the market as substitutes for formaldehyde. Farmers are cautioned against the use of these, for there is no other material known which is better than formaldehyde (or formalin) for killing the smut, and the experiment station knows of none as good. Moreover, the cost of these substitutes, per bushel of seed treated, is much the greater. But, regardless of cost, the money spent for most of them may be considered wasted as they have no value whatever in killing smut, whereas the value of formaldehyde has been fully established by twenty years of satisfactory use.

THE ATOMIZER METHOD

Some work in treating oats for smut has been done at Cornell and Michigan agricultural experiment stations to determine the value of using a stronger solution of formaldehyde by applying it to the oats in the form of a fine spray. In this method one pint of 40 per cent formalin is mixed with one pint of water, the quart solution being sprayed over fifty bushels of oats while the oats are shoveled in order that the formalin may be distributed as uniformly as possible. After applying the formalin, the oats are piled and covered for five hours when they are ready for seeding. This method is reported to have completely killed the smut. While the Iowa station has made no tests with this method, it would seem that the treatment is in its essentials much like the method now recommended by this station. The choice between the two methods depends upon the convenience of operation.

WHAT IS SMUT?

Every grower of oats is familiar with the appearance of the smutted plants. Smut is a fungous plant which cannot get its own plant food from the soil and water and make it into plant tissue with the aid of sunlight, but must get its food supply from other plants; therefore smut is a parasite. The smutted heads of oats (also of barley and wheat), are the ripened seeds or spores of the smut plant. The smut seed germinates in the ground where it has been placed with the seed grain and then sends its shoots up within the tissue of the grain plant, feeding upon the juices of the latter. As the oat plant grows and its flowers develop the smut plant steals the juices intended for the developing grains and uses them to make its own seed or spores. These spores are the black masses which appear in the place of the seed grain and will number millions. As the smut ripens these spores are blown about by the winds infecting other plants and thus continuing in the crop year after year.

KINDS OF OAT SMUT

Several kinds of smut attack small grains and treatments that are effective against some neither prevent nor retard the growth of others. That most commonly found in Iowa is the "loose smut of oats." and this, fortunately, may be controlled by the use of formaldehyde. This is likewise true of the "covered smut of wheat" which is of next importance; this is also known as "stinking smut" or "bunt."

The method in which the smut fungus attacks the grain plant varies greatly with the different kinds. The spores of the loose smut of oats ripen about the same time as the grain and become attached with the seed grain either within the hull or to the outside just as do dust particles. These spores may be scattered in the field by the winds or during the threshing operation. When the seed germinates in the spring, and smut spores placed in the soil with the oats also germinate, and make their way into the tissues of the oat plant.

SMUT IN IOWA OAT FIELDS

The actual per cent of smutted plants was determined in 5,904 Iowa oat fields in 1912 and 1913 with the results as shown in table three. While 7.5 per cent of the plants were smutted in the fields where the seed had not been treated, the loss in some fields was over 30 per cent. The presence of 1.4 per cent of smut in the fields where the seed had been treated indicates that in some cases the formaldehyde used was not of proper strength or else that the work was not carefully done:

TABLE III—SHOWING THE PER CENT SMUT IN IOWA OAT FIELDS 1912-1913.

Year	Number of Counts	Per cent Smut
	Seed Untreated	
1912	3,356	7.3
1913	1,994	7.8
Average		7.5
	Treated Seed	
1912	312	1.9
1913	342	1.0
Average		1.4

AMOUNT OF SMUT VARIES FROM YEAR TO YEAR

The amount of smut found in 1912 and 1913 is nearly the same, but it is not unusual to find considerable variation from year to year. As a usual thing oats which are badly smutted one year when used for seed in the following season will produce a crop badly smutted, but this is not always the case as seed known to be badly smutted sometimes produce a crop quite free from it. Sultry weather and dashing rains, with little wind at the time the smut spores are ripening, no doubt, results in a decrease in the amount of infection, as the smut spores settle, or are washed to the ground, while clear, windy weather at this time results in an increase in smut the following season. An increase in smut infection seems also to occur when warm clear weather continues for several days in the spring immediately following oat seeding, due possibly to a difference in the optimum temperature at which the seed oats and the smut spores must germinate. To infect the oat plant the smut spores must germinate at very nearly the same time as the grain, since infection can occur for only a short time following the germination of the seed.

MORE SMUT IN SOME VARIETIES THAN IN OTHERS

Of the varieties of oats commonly grown in Iowa, the Early Champion is known to be more susceptible to smut than others; this variety often contains fifteen per cent of smutted plants when most other varieties grown under the same conditions have perhaps only five per cent. There is considerable variation in the susceptibility of other varieties. In general, the earlier varieties are more badly smutted than those maturing later in the season.

HEALTHY HOGS FOR HOOVER.

By Ivanhoe Whitted

Mr. Hoover is urging the swine grower of the Middle West to make two pigs grow next year where one grew before. Mr. Hoover is in a position to know what he is talking about when he cites the world shortage of pork products, and anything he may have to say on the subject should be listened to and accepted as expert evidence.

Coincident with the demand made on them for more pork the producers have called attention to certain existing conditions which preclude, absolutely, the growing of pork at a profit. Efforts are being made to work out an impartial relation between the price of corn and the price of hogs, and it is believed the immediate future will bring satisfactory fruit for the labor expended. Mr. Hoover has pledged himself to do everything in his power to secure and to maintain a happy balance of prices, and such an assurance from the nation's food administrator should justify the producer in buckling down to the business of growing that second pig.

But there is another problem hanging about the swine grower's door demanding consideration, and that is the problem of cholera control. It is not a new problem, but at this time, under the spur of the world's necessity, it should be taken up anew and given all the consideration and enthusiasm usually accorded to brand-new questions. For the hog cholera specter is abroad in the land and, as usual at this time of the year, growing in virulence with the approach of winter. Cholera control is absolutely necessary if the present rather limited supply of breeding animals is to be conserved for future usefulness; and unless the supply is conserved conscientiously that second pig will certainly fail to materialize.

TRIBULATION FOR THE PIG

The way of the ninteenth-century porker is thickly beset with trials and tribulations in the form of parasites, external and internal, and ailments of one kind and another, chief of which is cholera. It is estimated that not less than 90 per cent of all the hogs that die each year in the United States die of cholera. That means that when a pig suddenly shows symptoms of sickness the chances are nine to one it has cholera.

Hog cholera first appeared in Ohio more than eighty years ago and has been the source of enormous annual losses to swine breeders ever since. It has been distributed far and wide, and if there remains a nook or a corner anywhere in Uncle Sam's great domain that has not been ravaged by this scourge it is because that particular nook or corner has never been utilized for the production of pork.

VIRULENCE OF DISEASE NOT UNDERSTOOD

It may sound superfluous to the reader to say that hog cholera is highly contagious. Everybody is supposed to know that. Just the same, a host of breeders fail to appreciate the real deadliness of the disease in spite of all that has been preached, promulgated and experienced. This must be so, else the veterinary officials and others working so manfully to control the disease would be favored with more universal support and cooperation than is given them.

Just how the Buckeye State picked up hog cholera more than three-quarters of a century ago, or when, where or how the disease originated nobody knows. The claim is frequently made that cholera is the result of feeding new corn at this time of the year, a conclusion reached, probably, because, for some unknown reason fatalities reach the high mark during the months of November and December.

Feeding new corn is not a cause. Veterinary authorities agree that cholera is a germ disease. Beyond that point they have been unable to proceed because up to the present time no man has been able to locate and brand the particular germ that is responsible for the deviltry. Like the foot-and-mouth- disease germ, it is so infinitesimally small that the most powerful microscopes have failed to locate it.

But if the germ is too small and insignificant to tag, there is no limit to its virulence and powers of destruction. Men who have made an exhaustive study of the disease and whose word and opinions are, therefore, dependable, inform us that as many as 7,000,000 hogs have died of cholera in a single year in the United States. Furthermore, they insist that for the last forty years the annual loss from this source has averaged not less than $30,000,000! Truly an appalling record.

CHOLERA INCURABLE

There is no cure for cholera. Once a pig falls a victim to the disease it is "good-night" for that particular pig. Only an occasional animal blessed with extraordinarily resistant powers recovers a measure of health after a long-drawn-out period of convalescence to other animals. An owner would be better off in the end if every animal attacked would shuffle off promptly, instead of hanging around for weeks as is sometimes the case.

The secret of cholera control, and a possible sometime eradication, lies in good care, sanitation and preventive measures, the most important of which is vaccination. Every swine grower in the country can do his bit here—if he will. It is the lack of cooperation on the part of so many growers that has enabled the cholera germ to remain so numerously and continuously on the job. Apathy, ignorance and criminal carelessness—especially the last-named—still exist in regard to hog cholera.

CONDITIONS GREATLY IMPROVED

However, the "world do move," deliberately, it is true, but irresistibly, for all that. Conditions are improving. Horse sense is slowly but surely crowding ignorance off the map. The agricultural colleges and universities are doing good work, unselfish work, the fruits of which will be conspicuous when the younger generation of farmers take over the harness and we older heads of "sot" ways and rusty ideals step aside. Veterinary workers in many states are getting a grip on the situation, and the time will come when losses from hog cholera will be reduced to a negligible quantity.

It calls for no particular strain upon the mental powers to recall the deplorable condition that prevailed here in the Middle West back in the "seventies" and the "eighties." Cholera was rampant. It swept the Corn Belt states like a widespread tornado. The plagues that were visited upon one Pharoah of old must have been tame affairs in comparison. Farms and feedlots were swept clean of porcine life. Thousands of carcasses rotted in the open, unburned and unburied. Quacks and conscienceless peddlers of "cures" reaped a fat harvest from distracted owners. There was a total lack of legal restrictions for the disposal of dead animals, and nothing whatever was attempted to stay the ravages of the disease. The popular supposition was that nothing could be done and so nothing was done.

AN OLD-TIME PLAGUE SPOT

The writer remembers a certain rendering plant established near his home town for the purpose of saving the grease from the cholera-stricken hogs. The site, which was convenient to the highway, was in the woods beneath a low bluff and but a few yards from the river. It was a crude makeshift sort of affair, but the proprietor did a thriving business. A man, team and wagon were kept upon the road collecting carcasses from twenty miles around, while many farmers delivered their own dead animals direct to the plant. A wagonload of carcasses was a common sight upon the highway. It was all open and above board, with no thought for the broadcast distribution of infection. Looking backward from the vantage point of 1917, one marvels that such dreadful conditions were countenanced even for a day.

If ever there was a plague spot on the fair face of God's earth it was that rendering plant. And it was only one of hundreds, possibly one of thousands, of similar establishments scattered thru the Corn Belt country! Then, as now, the disease appeared to deliver a climax of fatalities in the late fall and early winter. The frozen carcasses were brought in from a dozen townships and stacked high about the place to wait their turn in the tank. The warm days of Spring turned the spot into an abomination. It smelled to heaven—and then some. The piles of defunct pork rotted in the sun. The dribbling grease and corruption soaked the earth and stood about in horrid, glassy pools to be washed into the river every time it rained. Incidentally, it might be mentioned that a considerable portion of the annual ice crop of the community was harvested less than a mile below that plague spot—and the people lived thru it.

The "dead-hog wagon," as the children of the community called the outfit that collected the carcasses traveled all the highways with its festering loads, dripping corruption and germs from farm to farm without hindrance or objections. With such wholesale methods of distribution of contagion in operation the wonder is that a single pig was left in the country. But the order is passing, Glory be!

HOG HEALTH MUST BE THE SLOGAN

Hog health must be the working motto of swine breeders if Mr. Hoover is to get that second pig. Unceasing vigilance must be maintained if the present supply of breeding stock is to be kept anywhere near 100 per cent efficient. No animal on the farm responds to good treatment and proper care so promptly and satisfactorily as the pig. On the other hand, pigs, like poultry, are quick to suffer from antagonistic environment and insanitary conditions.

It is an easy matter to spot a pig that is the least bit "off" in condition. The healthy pig is a busy pig; busy either at filling its stomach with the materials and constituents necessary for pork making, or busy snoozing the aforesaid materials into prime bacon. For the porcine digestive machine seems to work most efficiently when the animal is sound asleep.

The healthy pig wears a glossy coat, a bright eye, a kink in its tail and an investigative snout, eager for any thing that hints of food value. To the eye of the connoisseur—meaning the careful herdsman—the outward appearance and what we may properly call the mental attitude of a pig toward life, constitute an unfailing barometer indicating its physical condition.

SYMPTOMS OF HOG CHOLERA

The symptoms of cholera are not always clear to the eye of the layman. They may be easily overlooked in a busy season or, if noted, be mistaken for some other ailment. But the wise herdsman will remember that nine-to-one bet stacked up against him and take no chances. Cholera may be sudden, acute and extremely vicious in its initial onslaught, or it may assume the tedious, insidious form and sneak in so unobtrusively that the entire herd is infected before the owner is aware of its presence. Acute outbreaks have been noted where the first warning the owner had was the discovery of a half-dozen dead animals some morning before breakfast. But as a rule the observing owner will have sufficient warning in time to segregate those first afflicted.

The healthy pig takes a lively interest in life. When it fails to respond promptly to the breakfast call, preferring to remain with snout dejectedly buried in the bedding, depend on it there's something wrong. For it isn't pig nature to loaf on the job and flout the bounties of a generous owner. And if, after having been kicked out of bed by the inquiring herdsman, the pig stands about with its hands in its pocket, like an I. W. W., refusing to eat, refusing to associate with its fellows, refusing to do anything but mope about, lop-eared and morbid, it should be hurried to the hospital at once. For a pig that acts like that is certainly sick. It may have a touch of pneumonia; it may have a belly full of ten-inch worms that are taking the joy out of life. But the chances are nine to one in favor of cholera, and the wise herdsman will segregate first and investigate afterward. It is better to be safe than sorry, and "pigs is pigs" these days. Time was not so very long ago when the passing of a pig or two was not considered an occasion for extended worry or mourning; but today when a hundred-pound shoat turns up its toes it is equivalent to throwing a twenty-dollar greenback into the kitchen fire.

PREVENTION THE ONLY SOLUTION

But if cholera cannot be cured it can be prevented by team work between breeders and veterinary authorities. The rendering tank and the "dead-hog wagon" are things of the past, but there are still too many ways of distributing germs. Some day, doubtless, the country will have quite as stringent quarantine regulations for the protection of live stock as for the human animal. There is no sane reason to the contrary. Certainly a cholera-afflicted herd of hogs is a menace to the health and business interests of a community and should be quarantined. The conscientious owner, mindful of the rights of his neighbors, will institute a self-imposed quarantine, at least to the extent of posting notices and enjoining visitors from the privilege of his hog lots.

Prevention is a strenuous undertaking for a community, not infrequently calling for social and financial sacrifices as well as labor and vigilance. But it is always worth the price. There are so many ways of scattering the germs. The migrant crow is a constant menace. This sable tramp may be of some slight use to a community by killing field mice and other small pests; but if allowed access to an occasional cholera-stricken carcass it can start more trouble in a day than the veterinarians can overcome in six months. The pigeons that visit from farm to farm; stray dogs that smell out every dead critter in the community; the shoes of sometime visitors; the wheels of passing vehicles; the introduction of strange animals into the herd, all these and a dozen other ways may bring disaster.

THINGS TO DO AND THINGS NOT TO DO

It looks like a gigantic undertaking to keep in mind and guard against so many possible sources of infection. But disinfectants are numerous and cheap in price and a liberal use of them will go far to protect the herd against the coming of evil.

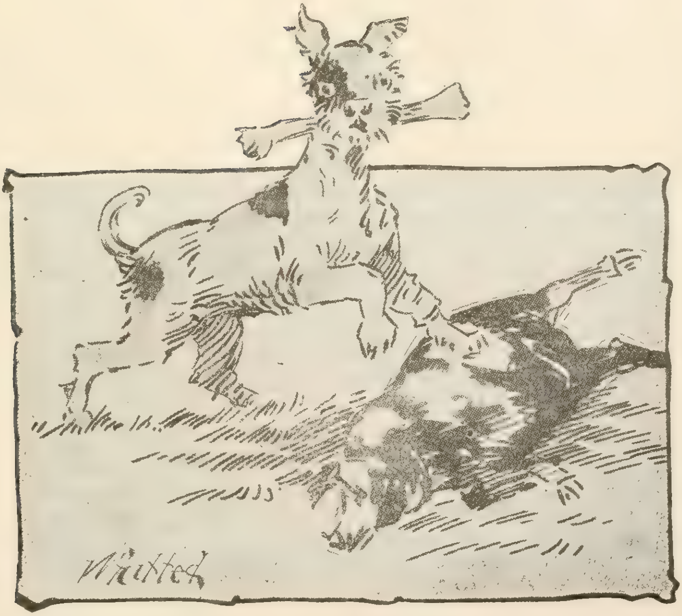
When a sick animal dies, BURN THE CARCASS at once. If there is any line of endeavor where the "DO IT NOW" slogan should be made the working motto, it is in fighting hog cholera. Saturate the carcass with kerosene—thank heaven there is one commodity that has not climbed to the top of the list in our present scheme of high living—and reduce it to ashes at once. Treat the spot where the animal died to a liberal coat of quicklime or some other effective disinfectant. Keep the premises clean and sanitary, for trash and offal should have no place in the swine grower's plans. In playing the national game the player's business first, last and all the time is to keep an eye on the ball! In combatting cholera the fighter's business first, last and all the time, is to keep an eye on the pig.

If an outbreak of cholera is reported in the vicinity DON'T do the fool act by rushing to the place to see what the sick animals look like and how they act. Many a man has done that very stunt and carried the infection home to his own herd. Tie up the dog. If the other fellow's dog comes snooping about your vine and fig tree without the proper credentials shoot it and bury the remains. That is, if you live in Iowa, for the "sunset dog law" gives you that privilege. If you live in Missouri, well—we'll leave it to your judgment.

TREATMENT BY VACCINATION

But the first thing to do, the all-important thing, the essential thing for the breeder to do, if anything approaching eradication of the disease is ever to be achieved, is to adopt and put into practice the simultaneous method of treatment by inoculation. The difference between the serum-alone treatment and the simultaneous treatment is the difference between temporary protection and permanent immunity. Which is a good deal when you consider it. If a grower has a bunch of hogs ready to lay on the market at an early date and cholera appears in the vicinity he should get busy at once with the serum-alone treatment. It will protect and tide the animals over and send them safely to market, provided the serum is fresh, pure, up to the standard required by law in most swine-growing states and is properly administered. But it should be remembered that it brings only temporary immunity.

Swine growers should get right in regard to the simultaneous treatment, for more or less prejudice against it is entertained by those unacquainted with the method and the sure results to be obtained. It is not a method of treatment for the greenhorn to go monkeying with. But with the prevailing high values for hogs we can't understand how any man would be willing to allow a greenhorn around his hog lots in any capacity. Every pork producer in the Corn Belt country is within easy reach and communication with a competent veterinary practitioner and there is no excuse for indulging in any false moves. The simultaneous treatment is long past the experimental stage. There is no doubt about its efficacy. It is safe, it is sure, and it brings permanent immunity to every animal treated. If every animal in the United States could be given the simultaneous or double treatment for cholera during the next ten days, Mr. Hoover could sleep undisturbed by haunting dreams or any possible shortage of pork. He would get that second pig just as sure as pigs grow into hogs.



"A nice, juicy bone," says the stray dog, "I'll carry it home," and straightway carries the disease to his master's herd.

MILK BY-PRODUCTS DO THEIR BIT IN PORK MAKING.

By JOHN M. EVVARD, Animal Husbandry Section, Iowa Experiment Station.

Hundreds of letters are received annually inquiring as to the value of skim milk or buttermilk for pig purposes.

Now skim milk and buttermilk are of about equal value, both being of practically the same composition and both giving approximately the same results in feeding experiments. The whole milk is skimmed once to get the skim milk, but buttermilk is really what is left from the second skimming. The cream is taken from the whole milk and then the butter is taken from the cream, in reality the practical equivalent of skim milk is left as buttermilk in the churn. In truth, we now make practically all of our culture buttermilks which we buy at soda fountains through the use of skim milk, one of which is particularly named, namely:—the Bulgarian buttermilk, a skim milk bacteriological product.

The old rules proposed years ago in order to find out the value of a hundred pounds of skim milk hardly cover the issue nowadays, although they have proven useful in their time. Two of these rules are particularly interesting, the one by Hoard given by Henry and Morrison is as follows: "To find the value of 100 pounds of skim milk when fed alone, multiply the market price of live hogs in cents per pound by five; if fed in combination with corn or barley, multiply by six." On this basis the money value of 100 pounds of skim milk with $10 hogs is fifty cents; $20.00 hogs, $1.00. In reality though this relationship is based between pounds of skim milk and price of hogs per hundred pounds there is very little relationship between the price of hogs and the value of skim milk; this will be shown shortly.

The Gurler rule runs as follows: "The value of 100 pounds of skim milk when fed alone with corn to fattening hogs is half the market price of corn per bushel." On this basis, therefore, the value of 100 pounds of milk is fifty cents with $1 corn, and $1 with $2 corn. This relationship, therefore, is on the basis of the price of corn rather than the price of hogs.

In order to determine the value of skim or buttermilk we have done considerable work with buttermilk, and the figures secured are applicable to skim milk.

In an average of four trials in which buttermilk was fed in limited quantity, from two to ten pounds per head daily, to young growing and fattening shoats this section has found that a hudred pounds of buttermilk replaces six pounds of corn and six pounds of meat meal tankage. The tests were run in this way: One group of pigs was self-fed on corn and tankage "Free-Choice" style; another similar group out of the same dams and sire was fed exactly the same ration with the exception that they were given some buttermilk daily. Naturally when they got the buttermilk they would hold up on the corn and tankage.

Physiologically their demands were different with the buttermilk in their stomachs and alimentary tract than where it was not present. By figuring we arrive at the above deductions, namely;—that 100 pounds of buttermilk saved six pounds of corn and six pounds of meat meal tankage.

Pricing the corn at $1.68 a bushel or $60 a ton the corn replaced is worth eighteen cents and the tankage replaced at $80 a ton is twenty-four cents, making a total replacement value of forty-two cents, hence 100 pounds of buttermilk in these particular experiments were worth forty-two cents a hundred pounds. As corn and tankage go up the buttermilk becomes more valuable; as corn and tankage go down it becomes less valuable.

Had these tests been run today and the buttermilk figured on the basis of the above rules the values would be much in excess of forty-two cents or with the Hoard rule almost twice as much or about ninety cents; with the Gurler rule, counting the corn at $1.68 a bushel, equals eighty-four cents or exactly twice the value found. It is readily to be seen, therefore, that buttermilk is worth the price of materials necessary to replace it if buttermilk is not used and corn plus tankage replaces buttermilk.

Let us go further with this proposition and see the effect of feeding buttermilk (remembering always that when we speak of buttermilk we might just as well speak of skim milk) in large quantities, giving young growing pigs of fifty-six pounds weight all the buttermilk they possibly can drink, keeping it before them continuously until they reach the weight of 300 pounds. Two groups were fed. Group I received shelled corn self-fed plus 60 per cent meat meal tankage self-fed plus wheat middlings self-fed plus rock salt self-fed, all feeds allowed "Free-Choice" style in separate feeders. Group II was fed exactly the same excepting that buttermilk was kept continuously before them in addition to the other feeds.

And how the buttermilk pigs did gain! They relished the buttermilk, coming as it did from the college creamery where the cream before churning was thoroughly pasteurized, thus eliminating disease producing organisms. The following table shows the number of days required to reach the weight of approximately 300 pounds, feed eaten, gains made, and feed required for 100 pounds of gain.

BUTTERMILK VERSUS NO BUTTERMILK

	Group I	Group II
Final Weight	296	299
Number of Days	218	156
Average Daily Feed Eaten:		
Shelled Corn	4.87 lb.	2.27 lb.
Meat Meal Tankage	.37	.14
Wheat Middlings	.34	.22
Buttermilk	......	32.16
Rock Salt	......	......
Average Daily Gain Per Pig	1.10	1.54
Feed Required for 100 Pounds Gain:		
Shelled Corn	442.	148.
Meat Meal Tankage	33.	9.
Wheat Middlings	31.	14.
Buttermilk	......	2091.
Rock Salt	.4	.1

Note that the buttermilk pigs made the most rapid gains reaching 299 pounds in 156 days. It took the "no buttermilk" fed pigs sixty-two days longer to reach 296 pounds.

Note further that the pigs drank on the average a little over thirty-two pounds of buttermilk per head per day, and that they ate less than half as much corn, about a third as much meat meal tankage, and about two-thirds as much wheat middlings as where no buttermilk was given—evidently the buttermilk saved grain.

Note still further that on 100 pounds of gain, although it took a little over a ton of buttermilk or exactly 2,091 pounds, yet this 2,091 pounds saved considerable grain, or, to put it definitely and concretely, this little over a ton of buttermilk saved 294 pounds of corn, twenty-three pounds of meat meal tankage, seventeen pounds of wheat middlings and a quarter of a pound of salt. Putting it on a better unit basis, 100 pounds of buttermilk saved 14.09 pounds of corn, 1.17 pounds of meat meal tankage, .31 pound of wheat middlings and .01 pound of salt, a total of 16.07 pounds of grain replaced by 100 pounds of buttermilk.

Charging the corn at $60 a ton or $1.68 a bushel, tankage at $80, middlings at $50, and salt at $20 a ton this 100 pounds of buttermilk saved 40.19 cents worth of feed or it was worth on the basis of values given practically fifty cents a hundred pounds, this on the basis of it being fed in very large quantities.

Bear in mind that the buttermilk also saved time. In reality each 100 pounds of buttermilk saved practically a day's feeding of the pig which meant that you saved a day's labor in the feeding of said pig every time you gave him a hundred pounds of buttermilk in this comparative experiment.

With brood sows this section found that buttermilk has a higher replacement value than with shoats, this is natural and to be expected. In one test we found that 100 pounds of buttermilk saved five pounds of hominy feed, which is practically the same as corn, plus nine pounds of tankage,—a total of fourteen pounds of feed. Counting the hominy at $70 a ton and tankage at $80, the saving was 53½ cents, and what is more the young pigs did better when buttermilk was added to the basal ration of hominy feed and tankage.

With fattening shoats, therefore, we note that in the instance of limited feeding a hundred pounds of buttermilk or skim milk is equal to twelve pounds of grain; when fed in large quantities, sixteen; whereas when fed to sows 100 pounds of similar buttermilk, fresh from the creamery, saved fourteen pounds of grain with suckling sows.

Buttermilk or skim milk, therefore, is valuable according to what it replaces, and in practice in the corn belt it replaces corn plus tankage or similar supplement. We must place its value, therefore, not on the price of hogs but on the price of the things that it takes the place of, in reality the feeds we would use if we did not have the milk by-product.

Most assuredly skim milk and buttermilk are especially valuable feeds when it comes to balancing our ordinary rations, and why should it not be so? Milk was produced for young animals, hence it comes to its own to its fullest extent when fed to suckling pigs, for instance, or to young weanling pigs that are just starting out in the race of life.

PART IX

Annual Report of the Iowa Weather and Crop Service Bureau for 1917

GEORGE M. CHAPPEL, M. D., Director

For convenient reference and comparison with past and future years, this report contains the summaries of the monthly and weekly bulletins of the Iowa Weather and Crop Service in cooperation with the Weather Bureau of the United States Department of Agriculture for the year 1917.

The regular meteorological, climatological and crop statistical work of the Service has been maintained and kept up to the high standard of efficiency of past years; more than the usual attention having been devoted to the accuracy of the reports and the exposure of instruments.

Twenty-four thousand copies of the monthly Climatological Reports, and 30,000 copies of the weekly Weather Crop Bulletins were distributed during the year. Five hundred copies of the monthly reports are distributed each month through the Weather Bureau, U. S. Department of Agriculture, to scientific institutions and libraries in this and foreign countries.

The daily weather forecasts were distributed by telegraph at the expense of the U. S. Weather Bureau to 80 towns, by franked mail to 1,918 addresses, by rural delivery to 819 addresses, and by free telephone to 115,207 subscribers. Preparation was made to have frost warnings sent, in case of necessity, during the fruit blooming season, to all orchardists in the state who were prepared to use orchard heaters in case of frost or injurious temperatures.

CLIMATOLOGY OF THE YEAR 1917

The mean temperature, 44.8°, is the lowest in the 28 years of record and 2.6° below the normal. The temperature deficiency was accumulated chiefly in February, April, May, June, August, October and December. High temperatures occurred toward the close of July and November was abnormally warm. The total precipitation 27.81 inches, is 4.16 inches below normal. April and June were excessively wet, particularly in the latter month in the southern portion of the State, while deficiencies occurred in all other months but February. November was droughty. The season was favorable for small grains, but unfavorable for corn, about half of which was caught by frosts, October 1-8. Considerable frost damage occurred in the northeastern counties on September 11. About 15 per cent of the crop remained unhusked in the fields at the close of the year, and much that was cribbed was damaged by heating. The low yields of winter wheat, clover, timothy and alfalfa, were due to unfavorable conditions during the winter of 1916-17.

Barometer (reduced to sea level).—The average pressure of the atmosphere for the year was 30.06 inches. The highest pressure was 31.09 inches, at Sioux City, on December 29th. The lowest pressure was 29.02 inches, at Charles City, on January 21st. The range for the state was 2.07 inches.

Temperature.—The mean temperature for the state was 44.8°, or 2.6° below the normal. The highest annual mean was 49.3°, at Keokuk, Lee County. The lowest annual mean was 39.8° at Estherville, Emmet County. The highest temperature reported was 106°, at Clarinda, on July 30th. The lowest temperature reported was -40°, at Washta, on December 29th. The range for the state was 146°.

Precipitation.—The average amount of rainfall and melted snow for the year was 27.81 inches, or 4.16 inches less than the normal, and 1.09 inches less than the average for 1916. The greatest amount at any station was 36.00 inches, at Nora Springs, Floyd County, and the least amount was 20.78 inches, at Le Mars, Plymouth County. The greatest monthly precipitation was 13.82 inches, at Keosauqua, Van Buren County, in June. The least amount was a trace, at seven stations in the southern division in February, and at four scattered stations in November. The greatest amount in any 24 consecutive hours was 5.74 inches, at St. Charles, on August 4th. Measurable precipitation occurred on an average of 82 days, 8 days less than in 1916.

Snowfall.—The average amount of snowfall was 32.4 inches. The greatest amount reported from any station was 66.0 inches at Charles City, Floyd County, and the least amount was 7.6 inches at Corning, Adams County. The greatest monthly snowfall was 20.7 inches at Rock Rapids, Lyon County, in January.

Wind.—The prevailing direction of the wind was northwest. The highest velocity reported was 85 miles an hour from the west at Sioux City, Woodbury County, on June 22d.

Sunshine and Cloudiness.—The average number of clear days was 171; partly cloudy, 98; cloudy, 96; as against 178 clear; 98 partly cloudy, and 90 cloudy days in 1916. The average percentage of the possible amount of sunshine was 58 or about 3 per cent below the normal.

MONTHLY SUMMARIES

JANUARY.

Fair and mild weather till the 10th was followed by a cold wave, and temperatures of zero and lower occurred in nearly all portions of the State during the next few days. The coldest in the State during the month was —28° at Elkader on the 13th. A storm center in northern Arizona on the morning of the 20th passed over Iowa attended by snow on the 20-21st, and was followed by a cold wave. In the north part of the State, where the snow was heavy, it drifted and interferred seriously with rail traffic. The cold wave that followed was severe in the north portion of the State where temperatures 14 to 20 below zero occurred. Temperatures of 50 to 60 degrees, the highest of the month, were general on the 28th. General snow on the 30-31st was followed by the most severe cold wave of the winter which was sweeping southeastward across the State at midnight of the 31st.

As a whole, this may be regarded as a nearly normal Iowa January, though with an excess of precipitation and a deficiency in temperature in the northern and reverse conditions in the southern portions. Sunshine, averaging 67 per cent, is 17 per cent above normal and has seldom been equaled in January. Ice in the rivers averaged 9 to 13 inches thick at the beginning of the month and 11 to 22 inches at the close, and much ice of good quality was harvested.

Winter grain, which because of the deficiency in rainfall, did not become well established in the fall, is believed to have suffered somewhat from the glaze of December and the temperature extremes with deficient snow covering in January.

Pressure.—The mean pressure (reduced to sea level) for the state was 30.07 inches. The highest recorded was 30.99 inches, at Dubuque, on the 16th, and the lowest was 29.02, at Charles City on the 21st. The monthly range was 1.97 inches.

Temperature.—The mean temperature for the state, as shown by the records of 108 stations, was 17.0°, or 0.9° lower than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 11.8°, or 2.8° lower than the normal; Central, 16.9°, or 1.3° lower than the normal; Southern, 22.4°, or 1.5° higher than the normal. The highest monthly mean was 26.1°, at Keokuk, and the lowest monthly mean was 8.1° at Estherville. The highest temperature reported was 60°, at eight stations in Wapello, Jefferson, Henry, Van Buren and Lee Counties, on the 28th, and the lowest temperature reported was —28° at Elkader, on the 13th. The temperature range for the state was 88°.

Humidity.—The average relative humidity for the state at 7 a. m. was 81.1 per cent, and at 7 p. m. it was 77.2 per cent. The mean for the month was 79.2 per cent, or about 1.9 per cent less than the normal. The highest monthly mean was 88 per cent at Charles City, and the least was 73.6 at Omaha, Nebr.

Precipitation.—The average precipitation for the state, as shown by the records of 112 stations, was 0.83 inch, or 0.22 inch less than the normal. By divisions the averages were as follows: Northern, 1.17, or 0.33 inch more than the normal; Central, 0.78 inch, or 0.33 inch less than the normal; Southern, 0.55 inch, or 0.64 inch less than the normal. The greatest amount, 2.67 inches, occurred at Rock Rapids, and the least, 0.17 inch, at Corning. The greatest amount in any 24 consecutive hours, 1.03 inches, occurred at Storm Lake, on the 21st.

Snow.—The average snowfall for the state was 7.2 inches, or about the normal amount. The greatest amount, 20.7 inches, occurred at Rock Rapids, and the least, a trace, at Lamoni.

Wind.—The prevailing direction of the wind was from the northwest. The highest velocity reported from a regular Weather Bureau station was at the rate of 60 miles an hour from the northwest, at Sioux City, on the 10th.

Sunshine and Cloudiness.—The average percentage of the possible amount of sunshine was 67, or about 17 per cent higher than the normal. The percentage of the possible amount at the several regular Weather Bureau stations being as follows: Charles City, 62; Davenport, 58; Des Moines, 67; Dubuque, 67; Keokuk, 74; Omaha, Nebr., 77; Sioux City, 66. Clear days averaged 17, a record that has been equalled twice but never exceeded in 27 Januarys; partly cloudy days, 8; cloudy 6.

Miscellaneous Phenomena.—Halos, solar or lunar, occurred on the following dates: 3, 6, 7, 9, 13, 14, 20, 22, 24, 31. Fog: 2, 3, 4, 12, 21, 26, 27, 29, 31. Sleet: 4, 10, 20, 21, 26, 31.

COMPARATIVE DATA FOR THE STATE—JANUARY.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departue	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	19.7	+1.8	61	—27	2.03	+0.98	3.46	0.35	------	----	----	----	----
1891	26.0	+8.1	58	— 4	1.75	+0.70	3.99	0.61	------	4	13	7	11
1892	15.3	—2.6	76	—38	1.09	+0.04	3.13	0.10	6.9	5	16	9	6
1893	9.3	—8.6	54	—34	0.74	—0.31	3.20	0.13	6.9	6	11	9	11
1894	19.3	+1.4	60	—37	1.09	+0.04	2.24	0.31	6.0	5	14	9	8
1895	13.6	—4.3	68	—31	0.85	—0.20	2.65	0.09	8.7	4	15	7	9
1896	23.4	+5.5	68	—20	0.48	—0.57	2.10	T.	2.8	3	10	10	11
1897	17.2	—0.7	66	—30	2.01	+0.96	6.16	0.15	8.2	7	12	7	12
1898	23.4	+5.5	52	—11	1.60	+0.55	5.32	T.	12.6	5	15	6	10
1899	19.8	+1.9	68	—34	0.28	—0.77	1.15	T.	1.5	3	15	10	6
1900	25.6	+7.7	66	—20	0.53	—0.52	2.47	T.	2.3	3	16	7	8
1901	23.7	+5.8	60	—21	0.74	—0.31	2.34	0.04	6.2	4	14	9	8
1902	22.4	+4.5	63	—31	0.88	—0.17	2.83	0.19	9.4	4	17	8	6
1903	23.0	+5.1	60	—12	0.28	—0.77	1.46	T.	2.0	4	13	7	11
1904	14.0	—3.9	57	—32	1.18	+0.13	3.68	0.02	6.1	6	12	8	11
1905	11.2	—6.7	56	—30	0.91	—0.14	1.82	0.12	11.1	7	14	7	10
1906	24.6	+6.7	69	—19	1.52	+0.47	4.71	0.28	11.3	5	14	6	11
1907	18.8	+0.9	68	—22	1.52	+0.47	5.30	0.10	6.0	7	8	7	16
1908	24.9	+7.0	60	—18	0.44	—0.61	1.50	0.06	4.6	[illegible]	17	8	6
1909	21.2	+3.3	72	—25	1.66	+0.61	3.74	0.41	7.8	6	9	6	16
1910	18.1	+0.2	56	—35	1.57	+0.52	3.15	0.55	12.6	6	13	7	11
1911	20.2	+2.3	66	—35	0.97	—0.08	3.73	0.11	7.3	5	9	8	14
1912	4.2	—13.7	49	—47	0.53	—0.52	1.90	T.	5.5	6	14	7	10
1913	20.9	+3.0	62	—25	0.77	—0.28	2.05	0.04	7.2	5	14	9	8
1914	27.8	+9.9	64	—10	0.88	—0.17	2.34	0.27	5.1	5	11	8	12
1915	17.5	—0.4	59	—32	1.63	+0.58	3.15	0.10	7.3	8	13	8	10
1916	17.8	—0.1	63	—34	2.62	+1.57	6.07	0.85	7.2	10	12	6	13
1917	17.0	—0.9	60	—28	0.83	—0.22	2.07	0.17	7.2	4	17	8	6

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

FEBRUARY.

February, 1917, was the driest month of that name since state-wide observations began in 1890, and it was the coldest February since 1905. It was, however, rather a pleasant winter month as there was only one bad storm which occurred on the 4th, when the temperature was below zero all day, north of Des Moines, and the minimum temperatures ranged from 8° below zero at Keokuk, in Lee County, to 28° below zero at Lake Park, in Dickinson County. The velocity of the wind ranged from 39 miles an hour at Des Moines to 69 miles an hour at Sioux City. Over the greater part of the State these conditions were accompanied by falling snow, which made the worst blizzard for many years. Railroad traffice was suspended for several days on some lines in the northern counties. Although cold, the remainder of the month was generally pleasant. Over the southern counties there was practically no snowfall, and the ground in that section has been practically bare during the entire winter, and it is thought that winter grains have been injured. Owing to the lack of moisture during last summer, fall and winter the ground is very dry and many wells have failed. At Des Moines there has been a deficiency of precipitation every month for 13 consecutive months; the aggregate deficiency from February 1, 1916, to March 11, 1917, inclusive, is 13.04 inches. On the other hand, the northern counties have received about the normal amount of precipitation and sleighing has been good most of the winter. Some spring wheat was sown in Davis County on the 26th, notwithstanding the fact that the ground was frozen to a depth of three feet, except a few inches on the surface. At the end of the month there were no indications of ice breaking up in any of the streams.

Pressure.—The mean pressure (reduced to sea level) for the state was 30.16 inches. The highest recorded was 30.92 inches, at Omaha, Neb., on the 2d and the lowest was 29.20 at Sioux City on the 16th. The monthly range was 1.70 inches.

Temperature.—The mean temperature for the state, as shown by the records of 107 stations, was 15.2°, or 5.3° lower than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 9.9°, or 7.2° lower than the normal; Central, 15.3°, or 5.4° lower than the normal; Southern, 20.5°, or 3.1° lower than the normal. The highest monthly mean was 24.8° at Northboro, and the lowest monthly mean was 5.9° at Forest City. The highest temperature reported was 68°, at Northboro, on the 25th, and the lowest temperature reported was -37°, at Inwood, on the 2d. The temperature range for the state was 105°.

Humidity.—The average relative humidity for the state at 7:00 a. m. was 80.2 per cent, and at 7 p. m. it was 70.2 per cent. The mean for the month was 75.5 per cent, or about 4.2 per cent lower than the normal. The highest monthly mean was 87.0 per cent, at Charles City, and the lowest was 64.8 at Omaha, Neb.

Precipitation.—The average precipitation for the state, as shown by the records of 114 stations, was 0.36 inch, or 0.79 inch less than the normal. By divisions, the averages were as follows: Northern, 0.59 inch, or 0.32 inch less than the normal; Central, 0.37 inch, or 0.93 inch less than the normal; Southern, 0.12 inch, or 1.23 inches less than the normal. The greatest amount, 1.19 inches, occurred at Nora Springs, and the least, a trace, at seven stations in the southern division. The greatest amount in any 24 consecutive hours, 1.00 inch, occurred at Nora Springs, on the 19th.

Snow.—The average snowfall for the state was 3.5 inches, or 3.9 inches less than the normal. The greatest amount, 11.6 inches, occurred at Storm Lake, and the least, a trace, at 10 stations in the southern division.

Wind.—The prevailing direction of the wind was from the northwest. The highest velocity reported from a regular Weather Bureau station was 69 miles an hour from the northwest, at Sioux City, on the 4th.

Sunshine and Cloudiness.—The average per cent of the possible amount of sunshine was 63, or about 8 per cent higher than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 58; Davenport, 56; Des Moines, 61; Dubuque, 62; Keokuk, 71; Sioux City, 59; Omaha, Neb., 73.

Miscellaneous Phenomena.—Dates of: Fog, 13, 14, 15, 19, 22, 26, 27. Halos, solar or lunar, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 19, 28. Sleet or glaze occurred at several stations inthe southern counties on the 19th. Thunder was heard or distant lightning observed during the night of the 22d-23d at a number of stations in the southern division. Migration of birds at Earlham, blue birds and robins on the 23d and wild ducks on the 25th. At Bedford, wild ducks on the 22d.

THE WINTER OF 1916-1917.

The mean temperature for the three winter months was 17.0°, which is 3.2° below the normal for the State. The highest temperature reported was 68° at Northboro, Page County, on February 25. The lowest temperature reported was 37° below zero at Inwood, Lyon County, on February 2.

The average monthly precipitation for the State was 0.74 inch, and the average total precipitation was 2.23 inches, or 0.74 inch less than the winter normal. The average total snowfall, unmelted, was 17.4 inches, or 3.1 inches less than the normal and 0.4 inch less than the average fall for the winter of 1915-16.

The total number of days with .01 inch or more of precipitation was 13, or 6 less than the average for the winter of 1915-16. The average number of clear days was 46, partly cloudy 24, cloudy 20, as compared with 37 clear, 22 partly cloudy, and 32 cloudy days during the winter of 1915-16.

COMPARATIVE DATA FOR THE STATE—FEBRUARY.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departue	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	26.0	+5.5	67	-24	0.83	—0.22	2.18	0.11	------	------	----	----	---
1891	19.4	—1.1	70	-31	1.16	+0.11	2.41	0.55	------	3	13	7	8
1892	28.1	+7.6	68	-20	1.20	+0.15	2.18	0.12	5.0	6	6	7	16
1893	16.4	—4.1	60	-28	1.39	+0.34	2.91	0.06	8.1	6	10	8	10
1894	19.7	—0.8	60	-19	0.89	—0.16	2.41	T	8.4	3	16	8	4
1895	16.4	—4.1	73	-33	0.49	—0.56	1.34	0.02	3.3	4	13	9	6
1896	27.4	+6.9	78	-13	0.71	—0.34	2.40	0.04	5.4	4	12	9	8
1897	24.7	+4.2	61	-24	0.89	—0.16	1.81	0.22	8.0	5	6	10	12
1898	24.2	+3.7	62	-18	1.20	+0.15	3.65	0.10	7.8	5	10	9	9
1899	12.2	—8.3	75	-40	0.89	—0.16	4.32	0.12	7.1	5	11	10	7
1900	14.8	—5.7	60	-27	1.30	+0.25	4.57	0.18	9.9	6	10	8	10
1901	17.5	—3.0	49	-21	1.01	—0.04	3.00	0.12	9.7	4	15	7	6
1902	17.6	—2.9	62	-21	0.73	—0.32	2.39	0.02	2.6	4	13	8	7
1903	19.8	—0.7	56	-21	1.18	+0.13	3.25	0.30	7.9	4	13	7	8
1904	14.8	—5.7	70	-26	0.41	—0.64	1.99	T	4.5	4	10	9	10
1905	12.8	—7.7	69	-41	1.57	+0.52	2.97	0.44	15.5	7	14	6	8
1906	23.6	+3.1	66	-32	1.29	+0.24	2.91	0.20	6.1	5	14	7	7
1907	25.0	+4.5	65	-31	0.71	—0.34	1.95	0.06	4.6	4	14	6	8
1908	24.3	+3.8	59	-16	1.69	+0.64	3.95	0.23	8.9	6	12	6	11
1909	26.2	+5.7	62	-26	1.54	+0.49	4.72	0.30	7.7	5	11	6	11
1910	17.8	—2.7	58	-21	0.46	—0.59	2.09	T	4.0	3	14	8	6
1911	27.3	+6.8	71	-13	2.76	+1.71	5.46	0.50	7.0	6	12	6	10
1912	18.1	—2.4	57	-30	1.21	+0.16	3.25	0.04	11.2	5	10	9	10
1913	20.2	—0.3	70	-24	0.82	—0.23	2.39	0.07	7.3	4	14	7	7
1914	16.8	—3.7	59	-29	0.87	—0.18	1.99	0.32	9.2	6	10	9	9
1915	29.1	+8.6	62	- 8	2.93	+1.88	5.39	0.43	9.4	9	9	5	14
1916	19.0	—1.5	62	-32	0.55	—0.60	1.38	0.05	6.0	4	14	8	7
1917	15.2	—5.3	68	-37	0.36	—0.79	1.19	T	3.5	3	14	8	6

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

MARCH.

March opened cold with temperatures of zero or lower in all but the southeastern counties on the 4th and 5th, the lowest being -13 degrees at Lake Park on the 4th. Excepting a warm period, 9th-11th, it continued rather cold till the 19th when a warm period set in that continued till the close of the month. At Des Moines the ground was frozen to a maximum depth of about 4 feet on March 6, but by the 26th, practically all frost had disappeared. In the southern portion of the state the average daily excess in temperature was about 2.5 degrees, while in the northern portion there was a slight deficiency.

Precipitation, as in the two preceding months, was above normal in the northern, normal in the central, and below normal in the southern divisions. The principal periods with precipitation were, 7th, 12th-13th, and 16th. During the latter two periods, there was considerable glaze, sleet and snow, particularly in the north and central divisions. Over an area extending from Fort Dodge to Des Moines and east to the Mississippi River the mist and light rain beginning on the 12th froze to all exposed surfaces, giving them a heavy coating of ice that in many places measured an inch in thickness. On the 13th a considerable increase in the wind force, acting upon the overburdened telephone wires, caused great damage. More than 1,600 poles were snapped off and 10,000 breaks occurred in long distance wires alone. The damage is estimated at $175,000, besides the loss of business for nearly a week. Railway and telegraph wires seem to have suffered less. On the 16th, heavy snows, accompanied by shifting gales, occurred in the northern portion of the state, interrupting railway traffic for a few days.

There was no appreciable snow covering over the southeast one-third of the state or anywhere in the southern tier of counties, but in the western counties near the Minnesota line, the snow did not disappear till the closing days of the month.

By the close of the month grass was starting and field work was progressing rapidly in the southern division; seeding oats and spring wheat had been completed in a few southeastern counties; potato planting was reported well north in the central division; and sod plowing was being done as far north as Lyon county in the extreme northwest. Winter wheat, timothy, alfalfa, and clover both old and new, were seriously winter-killed, except that clover was favorably reported from some localities in the northern division, where it is most too early to form conclusions. The winter-killing in the southern division probably resulted from the prolonged drought that began last fall and continued through the winter, together with deficient snow covering and considerable extremes of temperature. In the central division, smothering seems to have occurred from a dense ice covering part of the winter. In the northern division the snow covering was deeper, continuous and more porous.

Live stock wintered well and ample feed remains.

Pressure.—The mean pressure (reduced to sea level) for the state was 30.02 inches. The highest recorded was 30.75 inchs, at Sioux City, on the 3d; and the lowest was 29.26 inches, at Omaha, Neb., on the 16th. The monthly range was 1.49 inches.

Temperature.—The mean temperature for the state, as shown by the records of 102 stations, was 34.6°, or 1.3° higher than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 31.2°, or 0.3° lower than the normal; Central, 35.1°, or 1.5° higher than the normal; Southern 38.6° or 2.5° higher than the normal. The highest monthly mean was 41.3°, at Ottumwa, and the lowest monthly mean was 27.2°, at Estherville. The highest temperature reported was 85°, at Lenox, on the 31st. The lowest temperature reported was -13°, at Lake Park on the 4th.

Humidity.—The average relative humidity for the state at 7 a. m. was 78 per cent, and at 7 p. m. it was 62 per cent. The mean for the month was 70 per cent, or about 4 per cent lower than the normal. The highest monthly mean was 79 per cent, at Charles City, and the lowest was 62, at Keokuk.

Precipitation.—The average precipitation for the state, as shown by the records of 107 stations, was 1.84 inches, or 0.07 inch more than the normal.

By divisions the averages were as follows: Northern, 1.90 inches or 0.37 inch more than the normal; Central, 1.83 inches, or 0.04 inch less than the normal; Southern, 1.78 inches, or 0.14 inch less than the normal. The greatest amount, 4.35 inches occurred at Sanborn, and the least, .57 inch, at Audubon. The greatest amount in any 24 consecutive hours, .50 inches, occurred at Sanborn, during a thunderstorm on the 16th.

Snow.—The average snowfall for the state was 6.2 inches, or 1.0 inch more than the normal. The greatest amount, 20.0 inches, occurred at Sanborn; Williamsburg and Lacona reported no snow, and 18 stations ported only a trace.

Wind.—The prevailing direction of the wind was from the northwest. The highest velocity reported from a regular Weather Bureau station was at the rate of 56 miles an hour from the northwest, this occurring at Sioux City on the 16th.

Sunshine and Cloudiness.—The average per cent of the possible amount sunshine was 60, or about 2 per cent higher than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 51; Davenport, 52; Des Moines, 62; Dubuque, 61; Keokuk, 71; Sioux City, 53; Omaha, Nebr., 69.

Miscellaneous Phenomena.—Fog occurred in the northeastern counties on the 2d, 6th, 7th, 10th, 11th and 15th. Hail in south and east portions of the state on the tenth. Halos, lunar or solar, on the 1st, 2d, 3d, 4th, 5th, 6th, 7th, 10th, 17th, 19th, 20th, 24th, 30th. A lunar halo of radius 46° was observed at Des Moines, 9:15 p. m. of the 5th. Sleet on the 6th, 7th, 11th, 12th, 13th in the southern and eastern portions of the state, and quite generally on the 16th, 22d and 23rd.

Birds first observed.—Boone, robins, 13th; Centerville, robins, 20th; Des Moines, robins, 12th; Earlham, wild geese, 20th, pewees, 24th, cranes, 29th; Forest City, robins, 11th; Grinnell, blue birds, 18th; Nora Springs, wild geese, 17th, robins and black birds, 22d; Pocahontas, wild ducks, 8th, brants, 9th, robins, 10th, meadow lark, 15th; Postville, robins, 21st, bluebirds, 30th.

Frogs appeared at Corydon on the 15th.

Rivers.—The ice in the Mississippi River broke up and moved out at Muscatine and Davenport on the 11th; LeClaire on the 19th; Clinton on the 21st; and Dubuque on the 22nd. The stages were moderate. The smaller rivers broke up quietly about the middle of the month in the southern half of the state where very little precipitation had accumulated during the winter. Further north the breakup was caused by a rather sudden change to warmer weather on the 19th, acting upon more than a normal accumulation of snow and ice. The Cedar River at Cedar Rapids passed the flood stage of 14 feet during the night of the 25th-26th, reaching a crest stage of 17.3 feet at 6 p. m. of the 26th. The Des Moines River at Boone, passed the flood stage of 17 feet on the 23rd, reaching a crest stage of 20 feet on the 25th. Several small rivers in northern Iowa, gorged, overflowed, washed out bridges and culverts, and seriously delayed railway and other traffic. This was the only damage reported.

COMPARATIVE DATA FOR THE STATE—MARCH

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departue	Highest	Lowest	Total	Departure	Greatest	Least	Snow fall	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	28.0	—5.3	75	—24	1.57	—0.20	3.67	0.32	----	--	--	--	--
1891	26.8	—6.5	66	—19	2.60	+0.83	4.58	1.33	----	10	6	8	17
1892	31.9	—1.4	84	— 6	2.22	+0.45	4.58	0.57	8.9	6	11	8	12
1893	31.8	—1.5	84	— 8	2.14	+0.37	4.40	0.64	4.0	8	9	11	11
1894	41.0	+7.7	84	— 5	2.03	+0.26	4.52	0.26	2.7	6	13	10	8
1895	34.4	+1.1	94	—11	0.83	—0.94	2.60	0.22	2.9	4	16	8	7
1896	30.9	—2.4	81	—12	1.10	—0.67	3.99	0.16	5.4	5	12	9	10
1897	32.0	—1.3	72	—22	2.39	+0.62	6.16	0.29	5.5	8	9	8	14
1898	37.5	+4.2	72	— 2	1.94	+0.17	6.21	0.33	8.7	6	12	9	10
1899	23.0	—10.3	75	—16	1.62	—0.15	5.90	0.87	8.0	6	7	12	12
1900	30.7	—2.6	81	—13	2.06	+0.29	5.15	0.45	6.6	5	12	9	10
1901	34.2	+0.9	76	— 8	2.64	+0.87	5.25	0.70	12.6	7	10	8	13
1902	39.1	+5.8	79	—12	1.45	—0.32	4.83	0.18	1.3	7	9	11	11
1903	38.8	+5.5	82	6	1.38	—0.39	3.90	0.15	3.9	7	11	7	13
1904	34.8	+1.5	78	3	2.18	+0.41	4.57	0.50	4.4	7	8	8	15
1905	41.5	+8.2	84	1	2.04	+0.27	3.70	0.39	4.1	7	8	8	15
1906	27.1	—6.2	65	—14	2.34	+0.57	4.55	0.58	8.9	10	8	7	16
1907	40.6	+7.3	92	— 7	1.35	—0.42	5.05	0.23	4.1	6	14	7	10
1908	37.9	+4.6	85	— 8	1.58	—0.19	3.74	0.45	1.1	6	13	7	11
1909	32.5	—0.8	71	—15	1.53	—0.24	5.00	0.28	9.8	6	12	10	9
1910	48.9	+15.6	92	—10	0.17	—1.60	1.32	0.00	T	1	23	6	2
1911	39.4	+6.1	83	2	0.93	—0.84	4.84	T	1.9	5	16	9	6
1912	24.9	—8.4	70	—19	2.01	+0.24	5.25	0.60	19.1	7	15	6	10
1913	31.9	—1.4	78	—23	2.48	+0.71	5.88	0.74	5.3	9	11	10	10
1914	34.7	+1.4	78	— 5	1.69	—0.08	3.84	0.28	1.8	7	12	8	11
1915	29.3	—4.0	61	— 5	0.96	—0.81	2.12	0.17	8.8	5	8	9	14
1916	35.2	+1.9	80	—18	1.57	—0.20	5.80	0.28	2.9	6	11	9	11
1917	34.6	+1.3	85	—12	1.84	+0.07	4.35	0.57	6.2	6	14	8	9

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

APRIL.

April, 1917, was generally cold, cloudy and rainy. Only a few days, particularly the 18th and 22d, were notably warm. The week, 9th-15th, was the least rainy, after which rain fell somewhere in the State every day, being heavy the last four days. Rainy days, averaging 11, nearly equaled the record of April, 1909, which had 12. Snowfall, 3.8 inches, has not been exceeded in April since 1896. It was heaviest in the southern division, where it averaged 5.4 inches which is greater than the total of the preceding three months. In Wayne and Decatur counties it exceeded one foot. The drought of several months in the central and southern divisions was effectually broken. Cloudy days, 14, is the greatest of record for April; and sunshine was correspondingly deficient.

Vegetation made slow progress. Winter wheat and meadows had winter-killed so badly that a large acreage was plowed up and devoted to other crops, mainly corn, though there was also a large increase in the acreage of oats and potatoes. Where the stand was considered promising enough to allow the winter wheat to grow, and this was mostly on heavy bottom lands, it made fair progress, as did other small grains, the seeding of which was about completed by the third week. Wet weather delayed the preparation of corn ground so that at the close of the month only a little planting had been done in the southern counties. Pastures and meadows were too backward to turn in stock. The pig crop was reported as below normal. Trees and fruits were generally dormant.

Pressure.—The mean pressure, (reduced to sea level) for the State was 29.99 inches. The highest recorded was 30.36 inches, at Sioux City, on the 8th, and the lowest was 29.51 inches at Omaha, Neb., on the 20th. The monthly range was 0.85 inch.

Temperature.—The mean temperature for the State, as shown by the records of 107 stations, was 45.5°, or 3.2° lower than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 43.8°, or 2.9° lower than the normal; Central, 45.9°, or 3.0° lower than the normal; Southern, 46.8° or 3.8° lower than the normal. The highest monthly mean was 49.4°, at Mt. Pleasant and Tipton, and the lowest was 41.8°, at Sibley. The highest temperature reported was 88°, at Lenox, on the 19th, and the lowest was 17° at Guthrie Center on the 2d, and at Sibley on the 15th. The temperature range for the State was 71°.

Humidity.—The average relative humidity for the State at 7 a. m. was 78 per cent, and at 7 p. m. it was 63 per cent. The mean for the month was 70 per cent, or about 3 per cent above the normal. The highest monthly mean was 74 per cent, at Charles City and Sioux City, and the lowest was 64 per cent, at Dubuque.

Precipitation.—The average precipitation for the State, as shown by the records of 117 stations, was 4.55 inches, or 1.69 inches more than the normal. By divisions the averages were as follows: Northern, 3.93 inches, or 1.25 inches more than the normal; Central, 4.44 inches, or 1.58 inches more than the normal; Southern, 5.27 inches, or 2.22 inches more than the normal. The greatest amount, 7.84 inches, occurred at Allerton, and the least, 2.05 inches, at Dubuque. The greatest amount in any 24 consecutive hours, 2.05 inches, occurred at Chariton on the 28th.

Snowfall.—The average snowfall for the State was 3.8 inches, or 2.0 inches more than the normal. The averages by divisions were: Northern, 3.0 inches; Central, 3.0 inches; Southern, 5.4 inches. The greatest amount, 15.0 inches, occurred at Allerton.

Wind.—The prevailing direction of the wind was from the northeast. The highest velocity reported from a regular weather Bureau station was at the rate of 47 miles an hour from the northwest at Sioux City on the 25th.

Sunshine and Cloudiness.—The average per cent of the possible amount of sunshine was 45, or about 15 per cent lower than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 37; Davenport, 48; Des Moines, 42; Dubuque, 53; Keokuk, 50; Sioux City, 40; Omaha, Neb., 51. At Charles City, Davenport, Des Moines and Sioux City, the percentages were the least of record for April. Clear days averaged 9; partly cloudy 7, cloudy, 14, the latter being the greatest of record for April.

Miscellaneous Phenomena.—Earthquake; Keosauqua, 3 p. m., 19th. Dense fog at a few stations on 17th and 30th. Hail, 17th, 19th, 20th, 24th, 28th, 29th and 30th. Sleet, 1st, 7th, 16th, 17th, 26th, 27th, 28th and 30th. Thunderstorms, 3d, 7th, 11th, 16th, 17th, 18th, 19th, 20th, 22d, 23d, 24th, 25th, 28th and 29th.

Birds first observed.—Earlham: turtle doves, 5th, mocking birds, 18th.

Frogs appeared at Earlham on the 10th.

Rivers.—Flood stages did not occur in any of the rivers, but all of them carried considerably more than the normal volume of water. In the boundary rivers, distinct crests, originating from the spring break-up at the headwaters, passed along between the 17th and 27th in the Mississippi, and between the 13th and 19th in the Missouri. The short, interior rivers fell steadily till about the 18th to 20th, after which a slight rise resulted from frequent, general and heavy precipitation. At the close of the month the soil was saturated and other natural storage well filled so that the streams will probably respond rather quickly to heavy rainfalls.

COMPARATIVE DATA FOR THE STATE—APRIL.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departue	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	51.8	+3.1	88	2	1.80	—1.06	4.46	0.38	------	6	14	9	7
1891	50.6	+1.9	93	13	2.15	—0.71	5.06	0.59	------	8	14	7	9
1892	45.4	—3.3	88	14	4.75	+1.89	8.38	2.43	5.7	9	8	9	13
1893	45.5	—3.2	96	15	4.21	+1.35	8.51	1.24	6.0	10	8	9	13
1894	51.7	+3.0	93	12	3.07	+0.21	6.91	0.55	0.2	9	11	11	8
1895	54.2	+5.5	98	8	2.62	—0.24	5.88	0.28	2.1	5	14	8	8
1896	54.5	+5.8	94	10	5.02	+2.16	9.67	2.35	4.5	11	11	10	9
1897	47.9	—0.8	89	19	5.35	+2.49	9.86	2.22	T	11	9	9	12
1898	48.1	—0.6	91	14	2.56	—0.30	4.82	0.27	T	8	13	9	8
1899	48.9	+0.2	89	1	2.40	—0.46	5.76	0.56	2.0	7	12	11	7
1900	52.2	+3.5	89	19	2.67	—0.21	6.62	0.43	0.9	6	12	9	9
1901	49.9	+1.2	92	15	1.79	—1.07	3.47	0.66	2.0	5	14	8	8
1902	48.2	—0.5	96	9	1.71	—1.15	4.15	0.40	T	5	14	11	5
1903	49.8	+1.1	86	17	2.98	+0.12	6.00	0.74	0.8	9	11	9	10
1904	44.1	—4.6	86	13	3.63	+0.77	8.97	1.52	1.4	7	15	6	9
1905	47.5	—1.2	90	10	3.03	+0.17	5.49	0.63	1.2	8	12	8	10
1906	52.5	+3.8	94	22	2.42	—0.44	5.55	0.53	0.6	8	14	9	7
1907	41.5	—7.2	80	10	1.32	—1.54	3.22	0.24	2.7	6	12	8	10
1908	50.5	+1.8	91	8	2.24	—0.62	4.59	0.67	0.3	8	14	8	8
1909	43.8	—4.9	86	14	4.58	+1.72	9.43	0.83	3.1	12	9	9	12
1910	52.5	+3.8	99	15	1.48	—1.38	4.86	0.10	3.0	7	14	7	9
1911	46.7	—2.0	86	3	3.09	+0.23	6.04	1.33	3.6	9	11	8	11
1912	49.9	+1.2	84	20	2.66	—0.20	5.66	0.78	1.1	8	13	8	9
1913	50.2	+1.5	88	16	3.28	+0.42	7.43	1.12	2.7	9	15	5	10
1914	48.6	—0.1	88	11	2.52	—0.34	5.03	0.37	0.3	8	10	8	12
1915	57.2	+8.5	95	18	1.41	—1.45	4.02	0.05	T	7	15	10	5
1916	47.1	—1.6	90	11	2.62	—0.24	5.92	1.13	1.1	10	10	9	11
1917	45.5	—3.2	88	17	4.55	+1.69	7.84	2.05	3.8	11	9	7	14

T indicates an amount too small to measure, or less than .005 inch rainfall, and less than .05 inch snowfall.

MAY.

Temperature and total rainfall were below normal, only May, 1892 and 1907, being cooler in the 28 years of record. Rainy days were slightly less frequent than normal and the period, 12th-18th, was nearly rainless. Clear days and sunshine were above normal. On the night of the 18th-19th, following the warmest day of the month, with maximum temperatures near or above 90°, destructive wind and hail storms were general in the Northern Division of the State. Ice, heavy frost, or freezing temperatures were general during the first week. Frost on or about the 23d damaged potatoes, corn, garden truck and fruit buds in some localities, particularly in the northeast and east central sections.

Small grain made good progress. Meadows and pastures were slow, so that stock feeding had to be continued in many sections till the close of the month, thus depleting the grain supply. By the 20th of the month about 75 per cent of the corn had been planted, but frequent rains during the last decade delayed field work, and some planting remained to be done at the close of the month, at which time early planted corn was up and was of good stand and color. Apples, plums and cherries were backward, coming into full bloom in the southern counties about the 15th and in the northern counties about the 25th, but over most of the state the prospect is good.

Pressure.—The mean pressure (reduced to sea level) for the State was 29.96 inches. The highest recorded was 30.42 inches, at Sioux City, on the 14th, and the lowest was 29.36, at Sioux City, on the 26th. The monthly range was 1.06 inches.

Temperature.—The mean temperature for the State, as shown by the record of 108 stations, was 55.1°, or 5.4° lower than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 53.8°, or 5.2° lower than the normal; Central, 55.4°, or 5.3° lower than the normal; Southern, 56.0°, or 5.7° lower than the normal. The highest monthly mean was 58.1°, at Keokuk, and the lowest 52.2°, at Estherville. The highest temperature reported was 95° at Tipton, on the 18th, and the lowest was 25° at Chariton, on the 5th. The temperature range for the State was 70°.

Humidity.—The average relative humidity for the State at 7 a. m. was 73 per cent, and at 7 p. m. it was 52 per cent. The mean for the month, 63 per cent, is about 4 per cent below the normal. The highest monthly mean was 65 per cent, at Keokuk, and the lowest was 60 per cent, at Sioux City.

Precipitation.—The average precipitation for the State, as shown by the records of 115 stations, was 3.87 inches, or 0.70 inch less than the normal. By divisions the averages were as follows: Northern, 3.87 inches, or 0.61 inch less than the normal; Central, 3.80 inches, or 0.79 inch less than the normal; Southern, 3.95 inches or 0.69 inch less than the normal. The greatest amount, 7.33 inches, occurred at Iowa City, and the least, 1.69 inches, at Rockwell City. The greatest amount in 24 consecutive hours, 3.05 inches, occurred at Glenwood, on the 21-22d.

Snowfall.—The average snowfall for the State was 0.6 inch, or 0.5 inch more than the normal, and in the 26 Mays of record has been exceeded only in 1907 and 1911.

Wind.—The prevailing direction of the wind was from the northeast. The highest velocity reported from a regular Weather Bureau station was at the rate of 54 miles an hour from the west, at Sioux City, on the 18th.

Sunshine and Cloudiness.—The average per cent of the possible amount of sunshine was 62, or about 1 per cent more than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 58; Davenport, 59; Des Moines, 58; Dubuque, 65; Keokuk, 68; Sioux City, 59; Omaha, Neb., 68.

Miscellaneous Phenomena.—Dense Fog, 14th; Hail, 9th, 10th, 18th, 21st, 26th; Halos, solar or lunar, 2d, 9th, 11th, 18th, 19th, 25th, 28th, 30th; Haze was more or less prevalent from the 8th till near the close of the month, being most noticeable on the 13th, 14th and 16th, when it was sufficiently dense to obscure objects less than a mile distant and give the sun a yellowish cast at midday with red sunrise and sunset. At Washta it was described as resembling "Indian Summer" conditions; Meteors, 26th, 31st. See full account of the unusual meteor of the 31st on page 19; Sleet, 3d, 4th, 28th; Thunderstorms, 2d, 3d, 8th, 9th, 10th, 17th, 18th, 19th, 20th, 21st, 22d, 25th, 26th, 28th, 29th, 30th, 31st; Birds first observed, Grinnell, brown wrens, 9th; grossbeaks, 14th; red headed woodpeckers 15th.

Rivers.—Moderate stages prevailed in all of the rivers, and all fell slowly and steadily, except the Missouri, down which a slight crest passed toward the close of the month.

COMPARATIVE DATA FOR THE STATE—MAY.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departue	Highest	Lowest	Total	Departure	Greatest	Least	Snow fall	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	57.7	— 2.8	90	26	3.56	—1.01	6.44	1.61	------	9	10	13	8
1891	58.3	— 2.2	94	21	3.18	—1.39	7.10	1.46	------	8	14	9	8
1892	54.0	— 6.5	88	29	8.77	+4.20	12.64	4.87	T.	16	5	9	17
1893	56.6	— 3.9	96	26	3.45	—1.12	5.82	1.65	0	9	13	9	9
1894	61.1	+ 0.6	96	22	1.87	—2.70	4.77	0.33	0	6	17	10	4
1895	61.7	+ 1.2	104	24	3.19	—1.38	5.79	0.84	0	9	11	12	8
1896	65.5	+ 5.0	100	34	6.69	+2.12	11.79	3.40	0	12	11	12	8
1897	58.5	— 2.0	96	20	1.92	—2.65	3.59	0.21	0	5	16	10	5
1898	59.6	— 0.9	92	26	4.67	+0.10	7.82	2.22	0	12	9	10	12
1899	60.2	— 0.3	90	27	6.23	+1.66	11.47	3.09	0	13	9	12	10
1900	63.2	+ 2.7	98	22	3.31	—1.26	6.98	0.96	0	8	14	10	7
1901	60.7	+ 0.2	95	28	2.35	—2.22	4.57	0.72	0	7	16	9	6
1902	63.8	+ 3.3	97	25	5.39	+0.82	18.04	0.87	0	13	10	12	9
1903	61.6	+ 1.1	91	24	8.55	+3.98	15.45	2.88	0	16	9	12	10
1904	50.6	— 0.9	93	27	8.78	—0.79	8.15	1.50	0	8	13	10	8
1905	58.3	— 2.2	88	28	5.95	+1.38	10.83	2.57	0	14	12	11	8
1906	60.8	+ 0.3	95	24	3.54	—1.03	10.72	0.89	0	11	13	10	8
1907	53.5	— 7.0	96	14	3.48	—1.09	7.68	0.71	1.0	10	11	10	10
1908	59.4	— 1.1	93	13	8.34	+3.77	14.33	1.33	0	15	9	11	11
1909	57.9	— 2.6	97	18	4.34	—0.23	7.85	1.86	0.1	9	12	12	7
1910	55.4	— 5.1	89	18	3.41	—1.16	6.91	1.29	T.	10	15	7	9
1911	64.9	+ 4.4	98	23	3.76	—0.81	8.73	0.42	0.7	9	16	9	6
1912	62.7	+ 2.2	97	29	3.33	—1.24	6.41	0.72	0	10	14	11	6
1913	59.4	— 1.1	102	30	6.24	+1.67	10.25	3.14	0	13	11	8	12
1914	62.2	+ 1.7	98	25	3.31	—1.26	6.90	0.30	T.	10	14	11	6
1915	56.1	— 4.4	99	25	7.34	+2.77	13.21	3.82	T.	14	9	9	13
1916	59.9	— 0.6	94	27	4.93	+0.36	10.44	2.14	T.	12	13	10	8
1917	55.1	— 5.4	95	18	3.87	— 0.70	7.33	1.69	0.6	10	15	8	8

T indicates an amount too small to measure, or less than .005 inch of precipitation, and less than .05 inch of snow fall.

METEOR OF MAY 31, 1917.

Shortly before 10 p. m., May 31, a meteor of greater brilliance than any other that has occurred in this section of the country for many years was observed in the northwest one-third of Iowa and territory in adjacent states. It appeared like a giant sky rocket, accompanied by a glare of light equalling the brightest lightning flash, and explosions of sufficient violence to rattle windows and shake houses in Woodbury and Plymouth Counties in Iowa, and adjoining counties in Nebraska and South Dakota. Accounts of the direction of motion of the meteor vary greatly, due probably to the different angles from which it was viewed by the observers. The flash was distinctly seen by observers as remote as Fayette, in the northeastern portion of the State, Des Moines and Omaha, but no noises were heard at those places. A trail of smoke marked the path of the meteor for ten or fifteen minutes, when it dissipated without showing any direction of the higher air currents. A piece of material believed to have been a fragment of the meteor was found in the barnyard of E. Vander Hoop, a farmer living two miles north of Sioux Center, Iowa, and another similar piece was found near Osmond, Neb., by N. Welch, an auctioneer. The specimens were of identical appearance, resembling coarse grained baked clay, the outer surface of which had been molten and burned to a crisp brown.

While meteors have no appreciable effect on weather and belong to the science of astronomy rather than meteorology, the intense popular interest in this instance justifies more than ordinary consideration. Published herewith is the report of Mr. David E. Hadden, Fellow of the Royal Astronomical Society, and Corn and Wheat Region Observer of the United States Weather Bureau, at Alta, Iowa. Being both an astronomer and a meteorologist, his report is doubtly interesting.

DETONATING METEOR.

David E. Hadden, F. R. A. S., Alta, Iowa.

Date, Thursday, May 31, 1917.

Time of flash, 9:55 p. m.

Time of report 10 p. m.—five minutes' interval.

Location—Meteor first appeared some distance west of the zenith and traced a path through constellation Leo. A minute after the flash the location was easily observed by a bright streak about ten degrees in length directly below the star Epsilon of Leo, the right ascension of the streak was about 9h 27m and declination north 15 degrees. The streak was nearly parallel to a line drawn from the star Gamma Leonis to Alpha Leonis. The streak indicated approximately the location of the explosions, two in number, which followed each other rapidly and created much excitement. Reports indicate that the flash was observed over a radius of 100 miles, but the explosions were heard only about sixty or seventy miles.

Fire-balls, or aerolites as these meteors are called when they are large enough to explode and reach the earth, come from inter-planetary space, and when they reach the earth's atmosphere at about eighty miles above the earth's surface they either take fire or soon disappear, or take fire and burst in numerous fragments or fall to the ground as solid masses of stony matter fused with numerous metallic elements familiar to us on the earth.

Explosions take place from ten or fifteen to thirty-five miles above the earth's surface as a rule. At this height sound travels 700 or 800 feet a second, so that the distance of the explosion of the meteorite of

Thursday night was between forty-five and fifty-five miles in a direct line from Alta a little south of a point due west.

Fire-balls occur at all seasons and places over the earth, but it is found that February, May and November are noticeable for their frequency. They have been recorded for more than 2,000 years in history. Specimens of them are found in all the leading museums of the world—they vary in weight from a few ounces to many hundreds of pounds, and some of tons weight are suspected to be of meteoric origin.

The last detonating one observed here was on May 2, 1890, at 5:10 p. m., in full daylight. This fell near the Minnesota line in northern Iowa and was the subject of litigation in the courts regarding its ownership.

No special significance attaches to meteors from a weather viewpoint. They are interesting scientifically to estimate the height and density of our atmosphere and indicate that space is strewn with matter which the earth attracts in its onward march around the sun and through the stellar spaces. Possibly they belong to lost comets or are the debris of shattered planets.

JUNE.

June, 1917, was cool and wet, the rainfall being the greatest since 1890. In the central and southern divisions many stations had the greatest rainfall of record in June; some had three times the June normal, and 30 to 40 per cent of the annual normal. Excessive rains during the first week, particularly in the southern portion, seriously eroded hillsides and overflowed lowlands, destroying thousands of acres of crops. Similar conditions prevailed in the northeastern portion of the State on the 23d-26th. Much of the overflowed land was replanted to corn toward the close of the month and the remainder will be used for various catch crops if seed is available. The last ten days of the month were favorable, but at the close corn averaged 10 days to two weeks late; early oats, rye, barley and winter wheat were heading in the Southern Division; hay short and thin, except alfalfa which was being cut and yielding a fair crop in some sections; potatoes excellent. The warm days at the close of the month brought on a better crop of strawberries than was expected.

Pressure.—The mean pressure (reduced to sea level) for the State was 29.94 inches. The highest recorded was 30.39 inches, at Omaha, Neb., on the 14th, and the lowest was 29.11 at Charles City on the 6th. The monthly range was 1.28 inches.

Temperature.—The mean temperature for the State, as shown by the records of 106 stations, was 66.0°, or 3.1° lower than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 64.5°, or 3.1° lower than the normal; Central, 66.1°, or 3.2° lower than the normal; Southern, 67.4°, or 2.8° lower than the normal. The highest monthly mean was 69.8°, at Thurman, in the extreme southwestern part of the State, and the lowest was 61.9°, at Postville, in the extreme northeast. The highest temperature reported was

100°, at Clarinda and Omaha, Neb., on the 30th, and the lowest was 32°, at Matlock and Sibley, on the 15th. The temperature range for the State was 68°.

Humidity.—The average relative humidity for the State at 7 a. m. was 79 per cent, and at 7 p. m. it was 62 per cent. The mean for the month was 71 per cent, or 2 per cent higher than the normal. The highest monthly mean was 76 per cent, at Charles City, and the lowest was 66 per cent, at Sioux City.

Precipitation.—The average precipitation for the State, as shown by the records of 115 stations, was 6.65 inches, or 2.27 inches more than the normal. By divisions the averages were as follows: Northern, 4.87 inches, or 0.44 of an inch more than the normal; Central, 6.99 inches or 2.67 inches more than the normal; Southern, 8.09 inches, or 3.70 inches more than the normal. The greatest amount, 13.82 inches, occurred at Keosauqua, and the least, 3.04 inches, at Mason City. The greatest amount in 24 consecutive hours, 5.06 inches, occurred at Atlantic, on the 6th.

Wind.—The prevailing direction of the wind was from the northwest. The highest velocity reported from a regular Weather Bureau station was 85 miles an hour, from the west, at Sioux City, on the 22d.

Sunshine and Cloudiness.—The average per cent of the possible amount of sunshine was 62, or about 7 per cent less than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 45; Davenport, 53; Des Moines, 63; Dubuque, 54; Keokuk, 77; Sioux City, 67; Omaha, Neb., 74.

Tornadoes and Windstorms.—At 8:45 p. m. on the 5th a tornado visited Van Wert, causing a damage of $2,500. On the 12th tornadoes occurred in Iowa, Jones and Jackson Counties; damage, about $5,000. At Williamsburg, the hail accompanying the storm measured from one-half to one and three-fourths inches in diameter.

Nearly all sections of the State experienced violent wind squalls during the night of the 22d-23d. Wind mills, fruit and shade trees and farm buildings were blown down in large numbers. The total damage is difficult to estimate, but in some single localities, for example, Jefferson, the damage is placed at $15,000. Destructive wind squalls occurred in some localities on the night of the 30th.

Miscellaneous Phenomena.—Fog dense, 10th, 24th; Frost, light, 1st, 15th; Hail, Northern Division, 14th, 22d, 24th, 30th; Central Division, 4th, 5th, 11th, 12th, 13th, 30th; Southern Division; Halos, solar or lunar, 1st, 2d, 3d, 16th, 17th, 18th, 22d, 24th, 26th, 29th; Thunderstorms, All days except 10th and 17th.

Rivers.—The Missouri River was moderately high throughout the month but no flood stages occurred. Nearly all of the interior rivers of the southern portion of the State overflowed between the 6th and 10th. In the Nishnabotna the water was said to have been the highest since 1861. The rivers of the northeastern part of the State were highest from the 23d to the 25th, when the stage reached was in some cases said to be the highest in 50 years. Moderate stages prevailed in the Mississippi.

COMPARATIVE DATA FOR THE STATE—JUNE.

YEAR	Temperature				Precipitation					Number of Days		
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890 -----	72.7	+3.6	106	44	7.76	+3.38	16.53	1.57	11	12	10	8
1891 -----	69.1	0.0	99	37	5.39	+1.01	19.88	1.68	11	8	10	12
1892 -----	69.2	+0.1	102	42	5.19	+0.81	14.10	0.67	10	12	11	7
1893 -----	71.2	+2.1	100	40	3.91	—0.47	7.56	1.36	8	15	11	4
1894 -----	73.2	+4.1	104	34	2.67	—1.71	6.20	0.57	7	16	10	4
1895 -----	69.7	+0.6	102	34	4.32	—0.06	9.26	0.98	10	11	11	8
1896 -----	69.1	0.0	100	40	3.11	—1.27	7.89	0.81	9	12	13	5
1897 -----	69.1	0.0	103	29	3.81	—0.57	9.38	1.03	10	10	12	8
1898 -----	71.4	+2.3	99	42	4.72	+0.34	12.48	1.90	9	13	10	7
1899 -----	70.7	+1.6	100	42	5.04	+0.66	11.99	1.10	10	12	13	5
1900 -----	69.7	+0.6	102	38	3.98	—0.40	12.35	0.67	5	17	10	3
1901 -----	72.3	+3.2	106	30	3.71	—0.67	7.84	1.05	9	15	11	4
1902 -----	65.2	—3.9	97	32	7.16	+2.78	16.04	1.46	14	8	11	11
1903 -----	64.6	—4.5	96	30	2.86	—1.52	6.04	0.75	10	13	10	7
1904 -----	67.1	—2.0	94	35	3.45	—0.93	8.35	0.44	7	13	10	7
1905 -----	69.9	+0.8	100	36	5.53	+1.15	14.89	1.80	10	12	11	7
1906 -----	67.9	—1.2	99	37	3.92	—0.46	8.27	1.48	8	15	10	5
1907 -----	66.5	—2.6	98	36	5.35	+0.97	9.33	2.07	11	14	9	7
1908 -----	67.1	—2.0	94	35	5.66	+1.28	11.88	1.77	13	12	10	8
1909 -----	69.1	0.0	96	40	6.41	+2.03	13.30	2.80	13	12	10	8
1910 -----	69.5	+0.4	105	33	1.99	—2.39	5.51	0.05	7	18	7	5
1911 -----	75.7	+6.6	108	36	1.82	—2.56	6.28	0.06	5	20	8	2
1912 -----	66.2	—2.9	101	34	2.74	—1.64	5.71	0.78	7	15	9	6
1913 -----	71.5	+2.4	102	33	3.31	—1.07	8.95	0.74	7	19	8	3
1914 -----	72.2	+3.1	101	40	5.57	+1.19	13.24	1.17	13	12	14	4
1915 -----	65.1	—4.0	91	31	4.16	—0.22	9.99	1.72	11	12	12	6
1916 -----	64.5	—4.6	96	33	3.71	—0.67	7.96	1.41	10	13	11	6
1917 -----	66.0	—3.1	100	32	6.65	+2.27	13.82	3.04	12	13	10	7

JULY.

Cool weather prevailed during the first two decades, after which it was warm, with abnormally hot weather the last four days. Precipitation was deficient, but mostly well distributed till the last week of the month, when the drought accompanied by high temperature and hot winds damaged pastures, potatoes and garden truck. Corn which was 10 days to two weeks late at the close of June, made phenomenal growth the last half of July, but in the western part of the State the hot winds of the closing days of the month rolled the leaves considerably in the daytime. However, the abundant soil moisture caused a rapid recovery at night. It was beginning to tassel in all sections on the 31st. The season was generally favorable for small grain which, by the close of the month, was mostly harvested and some threshed, showing large yields and good quality.

Destructive wind squalls attended thunderstorms over Dallas and Polk counties between 7 and 10 p. m. of the 5th, unroofing many residences, uprooting large oak, walnut and linden trees and demolishing farm buildings. The destruction in the extreme western part of Des Moines was unusually large. Excessive rain fell in Allamakee County and adjacent territory in Wisconsin, on the 21st and 22d. At Lansing, the total precipitation for those days was 5.77 inches, of which 3.65 inches fell in a period of 4 hours and 5 minutes, beginning at 5 p. m. of the 21st.

Pressure.—The mean pressure (reduced to sea level) for the State was 29.92 inches. The highest recorded was 30.16 inches, at Sioux City, on the 16th, and the lowest was 29.58 at Sioux City on the 13th, and at Omaha, Nebr., on the 12th. The monthly range was 0.58 of an inch.

Temperature.—The mean temperature for the State, as shown by the records of 101 stations, was 74.3°, or 0.2° higher than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 72.6°, or 0.1° lower than the normal; Central, 74.7°, or 0.4° higher than the normal; Southern, 75.7°, or 0.5° higher than the normal. The highest monthly mean was 79.0°, at Omaha, Nebr., and the lowest was 70.2°, at Postville. The highest temperature reported was 106°, at Clarinda, on the 30th; the lowest was 38°, at Rock Rapids, on the 3d. The temperature range for the State was 68°.

Humidity.—The average relative humidity for the State at 7 a. m. was 78 per cent, and at 7 p. m. it was 54 per cent. The mean for the month was 66 per cent, or 1 per cent lower than the normal. The highest monthly mean was 72 per cent, at Charles City, and the lowest was 57 per cent, at Omaha, Nebr.

Precipitation.—The average precipitation for the State, as shown by the records of 111 stations, was 2.27 inches, or 1.69 inches less than the normal. By divisions the averages were as follows: Northern, 3.28 inches, or 0.60 inch less than the normal; Central, 2.25 inches, or 1.73 inches less than the normal; Southern, 1.28 inches, or 2.74 inches less than the normal. The greatest amount, 6.06 inches, occurred at Nora Springs, and the least 0.23 of an inch at Northboro. The greatest amount in 24 consecutive hours, 3.65 inches, occurred at Lansing, on the 21st.

Wind.—The prevailing direction of the wind was from the southwest. The highest velocity reported from a regular Weather Bureau station was 39 miles an hour, from the north, at Sioux City, on the 11th.

Sunshine and Cloudiness.—The average per cent of the possible amount of sunshine was 81, or 8 per cent more than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 68; Davenport, 76; Des Moines, 90; Dubuque, 72; Keokuk, 87; Sioux City, 87; Omaha, Nebr., 86. Twenty-nine stations reported no cloudy days.

COMPARATIVE DATA FOR THE STATE—JULY.

YEAR	Temperature				Precipitation					Number of Days		
	Mean	Departue	Highest	Lowest	Total	Departure	Greatest	Least	With precipitation .01 in	Clear	Partly cloudy	Cloudy
1890 -----	75.6	+1.5	110	45	1.98	—1.98	5.00	0.37	3	18	8	5
1891 -----	68.5	—5.6	99	41	4.22	+0.26	8.20	1.67	8	13	13	5
1892 -----	73.0	—1.1	104	38	5.29	+1.33	12.86	1.71	9	16	10	5
1893 -----	75.0	+0.9	102	47	3.33	—0.63	8.84	1.49	7	19	10	2
1894 -----	76.4	+2.3	109	39	0.63	—3.33	3.50	T	3	22	8	1
1895 -----	72.1	—2.0	104	35	3.40	—0.56	10.10	0.45	7	15	12	4
1896 -----	73.6	—0.5	104	42	6.90	+2.94	12.67	1.61	9	14	11	6
1897 -----	75.6	+1.5	106	42	3.26	—0.70	7.60	1.01	6	18	10	8
1898 -----	73.4	—0.7	102	42	2.98	—0.98	12.88	0.55	7	19	9	8
1899 -----	73.1	—1.0	101	38	3.07	—0.89	8.66	0.42	7	16	10	5
1900 -----	73.4	—0.7	102	37	6.15	+2.19	18.45	1.80	9	16	10	5
1901 -----	82.4	+8.3	113	46	2.34	—1.62	5.97	0.27	5	21	9	1
1902 -----	73.1	—1.0	99	41	8.67	+4.71	13.57	4.82	13	14	10	7
1903 -----	72.9	—1.2	100	40	4.83	+0.87	12.72	0.94	9	17	9	5
1904 -----	70.6	—3.5	100	38	4.41	+0.45	11.97	1.28	10	16	9	6
1905 -----	70.6	—3.5	102	40	2.91	—1.05	7.08	0.69	9	14	10	7
1906 -----	70.9	—3.2	102	42	3.04	—0.92	7.05	0.26	8	18	[illegible]	8
1907 -----	73.7	—0.4	102	41	7.27	+3.31	13.66	3.97	13	16	11	
1908 -----	73.0	—1.1	100	42	3.66	—0 30	9.21	0.70	8	16	10	[illegible]
1909 -----	72.3	—1.8	102	46	4.77	+0.81	12.20	1.20	10	15	8	[illegible]
1910 -----	74.5	+0.4	108	43	1.86	—2.10	5.69	0.12	7	19	8	4
1911 -----	75.5	+1.4	111	38	2.27	—1.69	6.62	0.08	7	18	10	3
1912 -----	74.6	+0.5	103	38	3.71	—0.25	7.56	1.17	10	17	10	4
1913 -----	76.1	+2.0	108	45	1.82	—2.14	6.23	T	5	21	8	2
1914 -----	76.6	+2.5	109	43	2.27	—1.69	6.50	[illegible]	5	20	8	3
1915 -----	69.5	—4.6	92	40	8.32	+4.36	15.83	3.68	14	10	12	9
1916 -----	79.7	+5.6	105	48	1.78	—2.18	6.87	0.10	5	23	7	1
1917 -----	74.3	+0.2	106	38	2.27	—1.69	6.06	0.23	7	21	8	2
1918 -----	73.1	—1.0	105	40	3.17	—0.79	8.05	0.26	8	19	8	4

Miscellaneous Phenomena.—Aurora, 11th, 28th, 29th; Fog, 7th, 9th; Hail, Northern Division, 12th, 14th, 16th, 23d; Central Division, 15th, 18th; Southern Division, 12th, 13th, 15th, 20th; Thunderstorms, All days, except 3d, 7th, 9th, 19th, 27th and 28th.

Rivers.—Ample stages for navigation continued throughout the month in the Mississippi River; and moderately high stages in the Missouri River till toward the close of the month when a steady fall began. The interior rivers fell steadily and became rather low by the close of the month.

AUGUST.

Droughty conditions that prevailed at the close of July were relieved by frequent and quite general showers during the first 12 days of August, followed by a nearly rainless week, after which only occasional local rains occurred. In many sections, particularly the south-central and southeastern, pastures had become brown and bare from drought and grasshoppers long before the close of the month, and stock was being fed. In the corn fields where a large supply of moisture had been stored earlier in the season and conserved by cultivation, the crop suffered little, though it would have been benefited by an additional supply. After the 4th, temperatures, especially at night, were generally so low that the crop made slow progress and only the earliest fields had reached the roasting ear stage by the close of the month. Threshing was 80 per cent finished, the yield and quality of all grains being exceptionally good and that of oats being the largest of record. Late potatoes and truck crops suffered somewhat from lack of moisture. Very little fall plowing could be done.

Pressure.—The mean pressure (reduced to sea level) for the State was 30.01 inches. The highest recorded was 30.32 inches, at Omaha, Nebr., on the 2d, and the lowest was 29.69, at Dubuque, on the 24th. The monthly range was 0.63 of an inch.

Temperature.—The mean temperature for the State, as shown by the records of 108 stations, was 69.4°, or 2.4° lower than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 68.0°, or 2.4° lower than the normal; Central, 69.6°, or 2.1° lower than the normal; Southern, 70.7°, or 2.5° lower than the normal. The highest monthly mean was 74.1°, at Mt. Ayr, and the lowest was 65.4°, at Postville. The highest temperature reported was 102°, at Lenox, on the 4th, and the lowest was 31°, at Matlock, on the 28th. The temperature range for the State was 71°.

Precipitation.—The average precipitation for the State, as shown by the records of 114 stations, was 2.29 inches, or 1.39 inches less than the normal. By divisions the averages were as follows: Northern, 2.21 inches, or 1.27 inches less than the normal; Central, 2.31 inches, or 1.46 inches less than the normal; Southern, 2.35 inches, or 1.43 inches less than the normal. The greatest amount, 6.31 inches, occurred at Onawa, and the least, 0.70 of an inch, at Davenport. The greatest amount in 24 hours, 2.80 inches, occurred at Olin, on the 7th.

Humidity.—The average relative humidity for the State at 7 a. m. was 80 per cent, and at 7 p. m. it was 54 per cent. The mean for the month was 67 per cent, or 4 per cent lower than the normal. The highest monthly mean was 74 per cent, at Charles City, and the lowest was 68 per cent, at Omaha, Nebr.

Wind.—The prevailing direction of the wind was from the northwest. The highest velocity reported from a regular Weather Bureau station was at the rate of 42 miles an hour, from the east, at Sioux City, on the 6th.

Sunshine and Cloudiness.—The average per cent of the possible amount of sunshine was 71, or about normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 60; Davenport, 72; Des Moines, 70; Dubuque, 74; Keokuk, 74; Sioux City, 77; Omaha, Nebr., 72.

Miscellaneous Phenomena.—Aurora, 8th, 9th, 14th, 15th, and 25th, those of the 9th and 25th being particularly bright in some sections of the State; Fog, 12th, 13th, 14th, 15th, 16th, 17th, 20th, 21st, 22d, 23d and 27th; Frost, 10th, 28th, 30th; Hail, Northern Division, 19th; Central Division, 21st and 27th; Southern Division, 21st; Halos, (lunar or solar), 15th, 21st, 27th and 28th; Thunderstorms, All days except 3d, 10th, 13th, 14th, 15th, 16th, 18th, 24th, 28th, 29th, and 30th.

Rivers.—The rivers fell slowly and steadily and were generally quite low by the close of the month.

COMPARATIVE DATA FOR THE STATE—AUGUST.

YEAR	Temperature				Precipitation					Number of Days		
	Mean	Departue	Highest	Lowest	Total	Departure	Greatest	Least	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	68.4	—3.4	102	36	3.41	—0.27	6.44	1.02	8	15	10	6
1891	69.1	—2.7	106	34	4.24	—0.56	13.02	1.23	8	13	12	6
1892	71.4	—0.4	102	40	2.24	—1.34	4.69	0.65	5	18	9	4
1893	69.4	—2.4	101	30	2.32	—1.26	6.22	0.40	5	19	9	3
1894	74.6	+2.8	108	39	1.58	—2.10	4.53	T	4	21	8	2
1895	71.9	+0.1	103	37	4.43	+0.75	10.63	0.67	7	17	9	5
1896	71.7	—0.1	104	34	3.52	—0.16	12.25	0.86	8	15	11	5
1897	68.9	—2.9	104	35	1.86	—1.82	4.98	0.47	6	15	11	5
1898	71.2	—0.6	103	40	3.44	—0.24	10.55	0.58	6	17	9	5
1899	74.4	+2.6	100	41	3.68	0.00	10.45	1.12	7	17	10	4
1900	77.4	+5.6	103	44	4.65	+0.97	10.43	1.26	6	18	10	3
1901	73.8	+2.0	105	40	1.29	—2.39	4.46	T	5	20	9	2
1902	69.1	—2.7	98	37	6.58	+2.90	15.47	1.57	11	11	11	9
1903	69.1	—2.7	101	41	6.64	+2.96	17.74	2.55	11	12	10	9
1904	69.1	—2.7	97	35	3.43	—0.25	6.75	0.66	7	17	8	6
1905	74.3	+2.5	104	44	4.05	+0.37	8.47	1.04	9	16	9	6
1906	74.1	+2.3	101	33	3.95	+0.27	10.51	0.92	9	17	9	5
1907	71.1	—0.7	99	37	4.33	+0.65	9.67	1.05	9	17	9	5
1908	70.0	—1.8	101	38	4.77	+1.09	10.55	1.35	9	17	9	5
1909	76.1	+4.3	103	33	1.81	—1.87	8.21	T	5	21	8	2
1910	71.9	+0.1	104	36	3.88	+0.20	11.22	0.37	8	15	10	6
1911	71.7	—0.1	107	34	3.32	—0.36	9.47	0.44	9	16	10	5
1912	71.0	—0.8	101	40	3.78	+0.10	7.90	0.89	10	15	10	6
1913	76.6	+4.8	108	40	2.68	—1.00	7.13	0.08	6	17	10	4
1914	73.7	+1.9	103	40	2.19	—1.49	4.90	0.42	7	17	10	4
1915	65.9	—5.9	91	30	2.81	—0.87	[illegible]	0.27	8	16	8	7
1916	74.0	+2.2	106	35	2.58	—1.10	6.23	0.49	7	18	9	4
1917	69.4	—2.4	102	31	2.29	—1.39	6.31	0.70	7	19	8	4

SEPTEMBER.

Temperatures were below normal in nearly all sections of the state, except a few stations in the western portion which reported slight excesses. A cool wave brought heavy to killing frosts to the lowlands of the northern and eastern sections on the morning of the 11th with freezing or near freezing temperatures at several stations, and considerable damage to corn, potatoes and other late crops. During a warm period that followed, the highest temperatures of the month occurred in the northern division on the 15th, though the high point was reached in the central and southern divisions on the 5th. It was during the 6-day period, 13th-18th, that corn made its best progress, but during most of the month the deficient temperature and sunshine made its progress very slow. At the close of the month, less than two-thirds of the crop was safe from on ordinary killing frost; and part of that was susceptible to serious damage by freezing temperatures. It was most backward in the northeastern one-third of the State and nearly all safe in the extreme southwestern section. Much more than the usual amount was saved in silo and shock, to offset the general hay shortage; and much good seed corn was gathered.

In the region west of the divide between the Missouri and Des Moines rivers and in Story, Polk, northern Warren, Mahaska, Wapello, and Davis counties, precipitation was greatly deficient so that little or no fall plowing could be done and less than the usual acreage of winter wheat and rye could be sown. Just east of the divide from Greene southeastward to Lucas counties and in the eastern counties from Clinton and Cedar to Henry and Des Moines, there was a marked excess in precipitation. In other sections the precipitation was about normal in frequency and amount. There was a marked increase in the acreage of winter grains sown in the northern division. In the southern division the acreage, where conditions were favorable, was about the same as that sown in 1916.

In the areas of deficient precipitation, pastures failed, stock was extensively fed, and the potato crop will be moderate to light.

Pressure.—The mean pressure (reduced to sea level) for the State was 30.09 inches. The highest recorded was 30.63 inches, at Dubuque, on the 10th, and the lowest was 29.75 inches, at Sioux City, on the 27th. The monthly range was 0.88 inch.

Temperature.—The mean temperature for the State, as shown by the records of 102 stations, was 62.6°, or 0.8° below the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 60.6°, or 1.2° below the normal; Central, 62.6°, or 0.9° below the normal; Southern, 64.6°, or 0.4° below the normal. The highest monthly mean was 66.2°, at Northboro, and the lowest was 58.3°, at Decorah, Estherville, and Postville. The highest temperature reported was 97°, at Clarinda, on the 3d; the lowest was 28°, at Sibley, on the 27th. The range for the State was 69°.

Precipitation.—The average precipitation for the State, as shown by the records of 106 stations, was 2.90 inches, or 0.46 inch less than the normal. By divisions, the averages were as follows: Northern, 2.85 inches, or 0.20 inch less than the normal; Central, 3.03 inches, or 0.43 inch less than the normal; Southern, 2.81 inches, or 0.75 inch less than the normal. The greatest amount, 8.68 inches, occurred at St. Charles, and at least, 0.39 inch, at Audubon. The greatest amount in 24 consecutive hours, 5.74 inches, occurred at St. Charles on the 4th.

Humidity.—The average relative humidity for the State at 7 a. m. was 85 per cent, and at 7 p. m. 65 per cent. The mean for the month was 75 per cent, or 1 per cent higher than the normal. The highest monthly mean was 80 per cent, at Charles City, and the lowest was 71 per cent at Omaha, Nebr.

Wind.—The prevailing direction of the wind was from the southeast. The highest velocity reported from a regular Weather Bureau Station was 40 miles an hour from the west, at Sioux City on the 18th.

Sunshine and Cloudiness.—The average per cent of the possible amount of sunshine was 59 per cent, or 4 per cent less than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 48; Davenport, 59; Des Moines, 54; Dubuque, 63; Keokuk, 69; Sioux City, 54; Omaha, Nebr., 67.

Miscellaneous Phenomena.—Fog, 9th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 20th, 21st, 22d, 26th, 27th; Frost, 10th, 11th, 22d, 25th, 26th, 27th, 30th; Hail, Northern Division, none; Central Division, 3d, 4th, 5th; Southern Division, 3d. Halos, (lunar or solar) 2d, 6th, 25th; Haze, 1st, 3d, 4th, 5th, 15th, 16th, 27th; Smoke, 16th, 17th, 18th, 26th; Thunderstorms, 1st, 2d, 3d, 4th, 5th, 6th, 7th, 9th, 11th, 12th, 13th, 14th, 15th, 18th, 19th, 20th, 23d, 25th, 26th, 27th.

Rivers.—The rivers generally were nearly stationary and at rather low stages throughout the month. In the upper Mississippi, the stages were so low as to interfere to some extent with navigation.

Destructive Hailstorm.—Probably the most destructive storm of hail, wind and lightning of the season occurred in Keokuk County, on Monday, September 3d. The storm began in Washington Township in the vicinity of Springfield near the middle of the west line of the County about 7 o'clock p. m. and moved east-south-eastward through Van Buren and German Townships to Clear Creek Township on the east side. The path of the storm was from 2 to 4 miles wide and about 20 miles long, the destruction of crops being complete over much of that area. Scores of farmers lost 100 acres or more of corn each. While most of the damage resulted from hail, there was also much damage to houses, barns, silos, and other structures by wind and lightning. There was much loss of live stock. The hail stones were so large that they cut through wire window screens and in some cases broke the siding of houses. Very few window panes in the path of the storm remained unbroken. One hail stone measured 6 inches in circumference.

COMPARATIVE DATA FOR THE STATE—SEPTEMBER

YEAR	Temperature				Precipitation				Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	59.3	—4.1	96	23	2.97	—0.39	4.85	1.36	7	13	10	7
1891	67.3	+3.9	104	28	1.33	—2.06	3.60	0.13	4	20	7	3
1892	64.7	+1.3	99	29	1.53	—1.83	4.15	0.16	4	16	8	6
1893	64.7	+1.3	102	18	2.34	—1.02	5.49	0.74	4	20	6	4
1894	65.1	+1.7	100	26	3.57	+0.21	7.43	0.67	8	15	10	5
1895	66.8	+3.4	103	22	3.03	—0.33	7.43	0.85	5	18	8	4
1896	58.5	—4.9	95	22	4.09	+0.73	9.96	1.82	10	11	9	10
1897	70.9	+7.5	106	26	2.04	—1.32	5.88	0.00	4	23	5	2
1898	65.3	+1.9	99	29	2.69	—0.67	8.45	0.41	7	16	9	5
1899	62.5	—0.9	104	15	0.93	—2.43	4.32	T	4	16	9	5
1900	64.4	+1.0	99	26	4.98	+1.62	8.82	2.48	9	15	8	7
1901	63.3	—0.1	102	26	4.77	+1.41	13.62	1.71	9	13	9	8
1902	59.1	—4.3	88	23	4.35	+0.99	10.41	1.65	9	15	6	9
1903	60.8	—2.6	94	28	3.81	+0.45	8.79	1.42	10	14	6	10
1904	64.0	+0.6	94	30	2.78	—0.58	8.33	0.09	7	13	8	9
1905	65.8	+2.4	96	36	3.81	+0.45	13.18	0.50	8	14	8	8
1906	67.2	+3.8	100	27	4.16	+0.80	11.10	0.64	8	16	8	6
1907	62.8	—0.6	98	25	2.75	—1.61	6.06	1.38	8	15	9	6
1908	67.9	+4.5	98	20	1.20	—2.16	3.46	0.25	3	21	6	3
1909	62.4	—1.0	94	30	3.58	+0.22	7.34	1.39	9	14	8	8
1910	63.2	—0.2	99	30	3.59	+0.23	7.43	1.18	9	14	7	9
1911	65.8	+2.4	103	32	5.12	+1.76	13.73	1.19	10	11	9	10
1912	62.1	—1.3	104	24	3.98	+0.62	10.12	0.28	11	12	8	10
1913	64.5	+1.1	107	19	3.31	—0.05	7.44	0.45	9	15	8	7
1914	64.5	+1.1	99	30	7.88	+4.52	16.24	2.48	10	16	7	7
1915	63.7	+0.3	91	30	6.03	+2.67	12.45	2.88	11	11	8	11
1916	62.5	—0.9	98	21	3.89	+0.53	9.71	1.45	7	17	8	5
1917	62.6	—0.8	97	28	2.90	—0.46	8.68	0.39	7	15	7	8

OCTOBER.

October, 1917, was 3.1° colder than October, 1895, which has heretofore been the coldest since state-wide records began in 1890. Killing frosts visited some sections of the State on the 1st, all but the southwest portion on the 6th, and all sections on the 8th. During a well defined cold wave that swept over the State on the 28th-30th, the temperature fell nearly to zero in the northern and western counties, the lowest being just zero at Galva. Precipitation was deficient, except in a few northeast and east-central counties. A general snowstorm on the 28th-29th was remarkably heavy for the season in the northeastern counties. Cloudiness was nearly the greatest of record; and sunshine was correspondingly deficient, particularly in the northeastern portion of the State where it was less than one-third of the possible amount.

Corn was seriously damaged by the unfavorable conditions; very little of it was fit to crib at the close of the month; that which was cribbed, heated so that it had to be dried and sorted; much soft corn in the fields, molded; and seed corn gathered since the freezes shows very low germination tests. Germination and growth of winter grains was much retarded. Less than the usual amount of fall plowing was done. Apples on the trees and potatoes in the ground were damaged in some sections. A few localities reported deficient water supply.

Pressure.—The mean pressure (reduced to sea level) for the State was 30.03 inches. The highest recorded was 30.59 inches, at Sioux City, on the 23d, and the lowest was 29.32 inches, at Davenport, on the 26th. The monthly range was 1.27 inches.

Temperature.—The mean temperature for the State, as shown by the records of 102 stations, was 42.9°, or 7.9° below the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 40.8°, of 8.2° below the normal; Central, 42.9°, or 8.0° below the normal; Southern, 45.1° ,or 7.5° below the normal. The highest monthly mean was 47.8°, at Northboro, and the lowest 38.1°, at Northwood. The highest temperature reported was 85°, at Mason City, on the 2d; the lowest was 0°, at Galva, on the 30th. The range for the State was 85°.

Precipitation.—The average precipitation for the State, as shown by the records of 108 stations, was 1.41 inches, or 1.05 inches less than the normal. By divisions the averages were as follows: Northern, 1.31 inches, or 1.03 inches less than the normal; Central, 1.49 inches, or 1.00 inch less than the normal; Southern, 1.44 inches, or 1.10 inches less than the normal. The greatest amount, 4.00 inches, occurred at Davenport, and the least, 0.15 inch, at Rock Rapids. The greatest amount in 24 consecutive hours, 2.02 inches, occurred at Davenport on the 16th-17th.

Humidity.—The average relative humidity for the State at 7 a. m. was 75 per cent, and at 7 p. m., 55 per cent. The mean for the month was 65 per cent, or 6 per cent below the normal. The highest monthly mean was 77 per cent, at Charles City, and the lowest, 54 per cent, at Omaha, Nebr.

Snow.—The first light snow flurries of the season occurred in nearly all portions of the State on the 11th. Other snows covered portions of the State on the 22d-23d and 26th-27th, but the first large, general snow storm occurred on the 28th-29th, when the amount varied from 11.0 inches at Decorah in the northeast to none at Rock Rapids in the extreme northwest and Thurman in the southwest. At Decorah this snowfall is said to be the greatest in October for more than 40 years.

The average fall for the month for the whole State is 2.2 inches which has been exceeded but twice since 1892. The greatest monthly amount is 12.5 inches at Decorah.

Wind.—The prevailing direction of the wind was from the northwest. The highest velocity reported from a regular Weather Bureau station was 57 miles an hour from the northwest, at Sioux City, on the 22d.

Sunshine and Cloudiness.—The average per cent of the possible amount of sunshine was 44, or 17 per cent below the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 19; Davenport, 41; Des Moines, 51; Dubuque, 38; Keokuk, 45; Sioux City, 54; Omaha, Nebr., 59.

Miscellaneous Phenomena.—Fog: 1st, 3d, 6th, 11th, 17th, 18th, 19th, 24th, 25th, 28th, 29th.

Frost: 1st, 6th, 8th (not recorded after first killing).

Hail: 9th, 10th, 11th, 17th, 18th, 20th.

Halos (lunar or solar). 2d, 3d, 4th, 7th, 8th, 19th, 24th, 26th, 30th.

Sleet: 9th, 11th, 28th, 29th.

Thunderstorms: 2d, 9th, 16th, 17th, 18th, 25th.

Rivers.—The rivers remained nearly stationary during the month.

COMPARATIVE DATA FOR THE STATE—OCTOBER.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departue	Highest	Lowest	Total	Departure	Greatest	Least	Snow fall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	49.2	—1.6	86	16	3.48	+1.02	6.82	1.59	-----	7	11	11	9
1891	50.0	—0.8	92	19	2.77	+0.31	6.53	0.85	-----	6	18	7	6
1892	54.5	+3.7	96	14	1.55	—0.91	2.58	0.00	0.0	4	21	6	4
1893	52.4	+1.6	94	10	1.28	—1.18	4.56	0.02	0.0	4	16	9	6
1894	51.7	+0.9	90	20	2.67	+0.21	5.25	0.03	0.2	8	14	8	9
1895	46.0	—4.8	88	4	0.47	—1.99	1.38	0.00	T.	2	19	8	4
1896	47.9	—2.9	88	12	3.13	+0.67	5.05	1.51	T.	5	18	6	7
1897	56.8	+6.0	97	12	1.14	—1.32	3.30	0.03	0.0	4	17	8	6
1898	47.5	—3.3	88	17	3.56	+1.10	5.75	1.27	3.6	8	7	9	15
1899	56.7	+5.9	95	17	1.73	—0.73	4.64	0.15	0.0	5	17	8	6
1900	59.3	+8.5	90	21	3.91	+1.45	8.00	1.20	0.0	7	16	7	8
1901	54.2	+3.4	88	20	1.98	—0.48	4.23	0.45	T.	6	17	7	7
1902	53.5	+2.7	83	20	2.54	+0.08	6.66	0.28	T.	5	16	8	7
1903	52.2	+1.4	90	16	1.95	—0.51	4.50	0.32	0.0	5	19	6	6
1904	53.1	+2.3	96	16	1.67	—0.79	4.43	0.14	T.	6	15	8	8
1905	49.2	—1.6	95	16	3.40	+0.94	5.36	1.20	1.6	8	16	6	9
1906	50.5	—0.3	87	7	1.96	—0.50	4.25	0.50	0.1	6	14	7	10
1907	50.4	—0.4	85	10	1.50	—0.96	3.71	0.30	0.0	5	20	5	6
1908	51.1	+0.3	89	17	3.38	+0.92	8.83	0.58	2.6	8	16	6	9
1909	49.7	—1.1	97	10	2.22	—0.24	4.70	0.48	T.	6	16	6	9
1910	55.2	+4.4	93	10	0.77	—1.69	1.73	T.	0.1	4	21	4	6
1911	48.7	—2.1	87	14	3.34	+0.88	7.03	0.73	0.6	10	12	8	11
1912	52.2	+1.4	92	16	2.98	+0.52	5.77	1.03	T.	6	21	3	7
1913	49.2	—1.6	89	-2	3.03	+0.57	7.29	0.35	1.2	9	15	8	8
1914	55.9	+5.1	88	14	3.23	+0.77	6.64	0.74	T.	9	16	6	9
1915	54.4	+3.6	86	19	1.31	—1.15	3.25	T.	T.	5	19	6	6
1916	50.9	+0.1	92	6	2.00	—0.46	4.33	0.20	2.0	8	16	7	8
1917	42.9	—7.9	85	0	1.41	—1.05	4.00	0.15	2.2	6	10	11	10

T indicates an amount too small to measure, or less than .005 inch rainfall, and less than .05 inch snowfall.

NOVEMBER.

The weather was mild and dry. The full magnitude of the damage to corn by the frosts and freezes of October, became apparent when cribbing was attempted in November. In spite of favorable conditions for drying, the husked corn, though carefully sorted, heated in the cribs so badly that it had to be spread out to dry. Husking ceased generally the last week of the month with 43 per cent of the crop still in the fields; and unusual methods were adopted to save it. Many cattle and hogs were shipped into the State to consume the soft corn.

Because of the cold in October and drought in November, winter wheat made slow growth and is not entering the winter in resistant condition. Where it has germinated, the stand is fair, but up to the close of November many fields had not yet germinated.

Pressure.—The mean pressure (reduced to sea level) for the State was 30.21 inches. The highest recorded was 30.66 inches at Davenport on the 26th, and the lowest was 29.47 inches, at Dubuque, on the 21st. The monthly range was 1.19 inches.

Temperature.—The mean temperature for the State, as shown by the records of 102 stations, was 40.7°, or 5.7° above the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 39.2°, or 6.4° above the normal; Central, 40.8°, or 5.7° above the normal; Southern, 42.0°, or 4.9° above the normal. The highest monthly mean was 45.8° at Omaha, Nebr., and the lowest was 36.3° at Elkader and Estherville. The highest temperature reported was 77° at Indianola on the 7th; the lowest was 3° at Whitten on the 24th. The range for the state was 74°.

Precipitation.—The average precipitation for the State, as shown by the records of 108 stations, was 0.28 inch, or 1.23 inches below the normal. By divisions the averages were as follows: Northern, 0.41 inch, or 1.00 inch below the normal; Central, 0.28 inch, or 1.25 inches less than the normal; Southern, 0.14 inch, or 1.23 inches less than the normal. The greatest amount, 1.02 inches, occurred at Sanborn, and the least, a trace, at Chariton, Cumberland, Greenfield, and Maquoketa. The greatest amount in 24 consecutive hours, 0.60 inch, occurred at Rock Rapids on the 21st.

Humidity.—The average relative humidity for the State at 7 a. m. was 83 per cent, and at 7 p. m. 68 per cent. The mean for the month was 76 per cent, or 2 per cent above the normal. The highest monthly mean was 84 per cent, at Charles City, and the lowest, 66 per cent, at Omaha, Nebr.

Snow.—The average fall for the whole State was 1.4 inches. The greatest amount was 5.0 inches, at Sanborn.

Wind.—The prevailing direction of the wind was from the southwest. The highest velocity reported from a regular Weather Bureau station was 50 miles an hour from the northwest, at Sioux City on the 21st.

Sunshine and Cloudiness.—The average per cent of the possible amount of sunshine was 49, or 5 per cent below the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 40; Davenport, 41; Des Moines, 53; Dubuque, 46; Keokuk, 49; Sioux City, 55, and Omaha, Nebr., 58.

Miscellaneous Phenomena.—Fog: 3d, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 20th, 24th, 25th, 26th, 27th, 28th, 29th, 30th.

Glaze: 30.

Haze: 4th, 5th, 7th, 9th, 10th, 11th, 14th, 15th, 16th, 17th, 18th.

Halos: (solar or lunar): 10th, 19th, 24th, 25th, 29th.

Sleet: 24th, 25th, 26th, 30th.

Thunderstorms: 9th, 10th, 11th, 21st.

Rivers.—Rivers remained nearly stationary and at a low stage during the month.

COMPARATIVE DATA FOR THE STATE—NOVEMBER.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departue	Highest	Lowest	Total	Departure	Greatest	Least	Snow fall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	38.6	+3.6	78	— 2	1.46	—0.05	3.55	0.71	------	8	15	8	7
1891	30.5	—4.5	84	—24	1.70	+0.19	3.64	0.06	------	7	10	8	12
1892	33.3	—1.7	70	— 3	1.10	—0.41	3.16	0.05	1.8	4	11	8	11
1893	34.0	—1.0	86	—13	1.17	—0.34	2.56	0.05	4.6	4	16	8	6
1894	32.7	—2.3	72	— 5	0.92	—0.59	2.42	T	0.4	4	9	11	10
1895	34.3	—0.7	86	—12	1.51	0.00	3.01	0.45	4.9	6	9	8	13
1896	29.6	—5.4	82	—15	1.83	+0.32	4.51	0.16	2.9	6	9	8	13
1897	34.3	—0.7	81	—19	0.66	—0.85	2.24	T	1.2	5	12	8	10
1898	32.2	—2.8	78	—17	1.50	—0.01	3.61	0.33	8.7	6	14	8	8
1899	43.9	+8.9	86	8	1.20	—0.31	2.97	0.13	0.5	5	12	8	10
1900	33.5	—1.5	79	— 6	1.06	—0.45	3.35	T	3.7	6	12	7	11
1901	35.8	+0.8	77	2	0.86	—0.65	2.30	0.20	2.6	3	18	6	6
1902	41.2	+6.2	79	4	2.13	+0.62	4.19	0.16	1.8	7	9	7	14
1903	34.2	—0.8	76	— 5	0.52	—0.99	1.74	T	1.1	3	13	8	9
1904	41.0	+6.0	80	4	0.15	—1.36	0.50	0.00	0.5	1	20	6	4
1905	38.4	+3.4	70	—12	2.84	+1.33	5.30	0.90	0.6	5	16	7	7
1906	35.4	+0.4	76	— 5	2.03	+0.52	3.86	0.35	4.4	8	9	7	14
1907	36.7	+1.7	68	— 4	1.03	—0.48	2.27	0.05	0.9	4	17	6	7
1908	39.3	+4.3	80	5	1.56	+0.05	3.31	0.21	1.4	5	14	7	9
1909	42.4	+7.4	84	— 3	5.39	+3.88	11.48	2.07	6.8	10	10	7	13
1910	33.4	—1.6	76	5	0.34	—1.17	1.03	T	0.7	3	13	9	8
1911	29.9	—5.1	79	— 8	1.42	—0.09	4.99	0.11	1.6	6	11	8	11
1912	40.1	+5.1	77	6	0.98	—0.53	2.38	0.00	T	2	18	8	4
1913	44.1	+9.1	78	10	1.18	—0.33	3.49	0.20	0.4	6	11	7	12
1914	41.0	+6.0	80	— 4	0.22	—1.29	0.95	0.00	T	2	19	6	5
1915	40.2	+5.2	83	— 5	1.94	+0.43	4.86	0.30	1.2	6	11	10	9
1916	37.3	+3.3	80	— 8	1.61	+0.10	3.65	0.05	3.6	5	16	6	8
1917	40.7	+5.7	77	3	0.28	—1.23	1.02	T	1.4	3	14	6	10

T indicates an amount too small to measure, or less than .005 inch precipitation and less than .05 inch snowfall.

DECEMBER.

December, 1917, mean temperature, 14.5°, is the lowest in the 28 years of state-wide records, the next coldest being 15.1° in December, 1909. Zero days were the most frequent of record. The largest temperature deficiencies were in the northwestern portion of the State. Sunshine was deficient, particularly in the eastern portion. Precipitation was deficient, except in portions of Lyon, Sioux, O'Brien, Cherokee, Webster and Hamilton counties. The ground was snow-covered about 25 days in the extreme northwestern portion of the State, and less than 15 days in the southwestern and east-central counties.

Although weather conditions seemed unfavorable, corn husking progressed, so that at the close of the month not more than 15 per cent of the crop remained in the field. Conditions were favorable for cribbed corn. Though severe temperatures prevailed for considerable periods, they were preceded and accompanied by porous snow covering, so it is believed that such winter wheat as was well established at the beginning of winter, is in good condition.

Pressure.—The mean pressure (reduced to sea level) for the State was 30.26 inches. The highest recorded was 31.09 inches, at Sioux City on the

29th, and the lowest was 29.63 inches at Sioux City on the 23d. The monthly range was 1.47 inches.

Temperature.—The mean temperature for the State, as shown by the means of 105 stations, was 14.5°, or 9.4° lower than the normal. By divisions, three tiers of counties to the division, the mean temperatures were as follows: Northern, 11.2°, or 10.0° lower than the normal; Central, 14.7°, or 9.4° lower than the normal; Southern, 17.6°, or 8.8° lower than the normal. The highest monthly mean was 20.9°, at Keokuk, and the lowest monthly mean was 6.3° at Inwood. The highest temperature reported was 62°, at Keokuk on the 2d, and the lowest temperature reported was -40° at Washta on the 29th, the range for the State being 102°.

Humidity.—The average relative humidity for the State at 7 a. m. was 83 per cent, and at 7 p. m. it was 77 per cent. The mean for the month was 80 per cent, or about normal. The highest monthly mean was 86 per cent at Charles City, and the least reported was 74 per cent at Omaha, Nebr.

Precipitation.—The average precipitation for the State, as shown by the records of 110 stations, was 0.56 inch, or 0.66 inch less than the normal. By divisions, the averages were as follows: Northern, 0.51 inch, or 0.56 inch less than the normal; Central, 0.63 inch, or 0.62 inch less than the normal; Southern, 0.54 inch, or 0.81 inch less than the normal. The greatest amount, 1.70 inches, occurred at Lacona, and the least, 0.14 inch, at Algona. The greatest amount in any 24 consecutive hours, 0.45 inch, occurred at Iowa Falls, on the 12th.

Snow.—The average snowfall for the State was 6.7 inches. The greatest amount, 17.0 inches, occurred at Lacona, and the least, 1.8 inches at Lenox.

Wind.—The prevailing direction of the wind was from the northwest. The highest velocity reported was at the rate of 51 miles an hour from the northwest at Sioux City, on the 9th.

Sunshine and Cloudiness.—The average percentage of the possible amount of sunshine was 38 per cent, or about 11 per cent less than the normal. The percentage of the possible amounts being: Charles City, 28; Davenport, 20; Des Moines, 46; Dubuque, 40; Keokuk, 44; Sioux City, 45; and Omaha, Nebr., 40 per cent. The average number of clear days was 10; partly cloudy, 9; cloudy, 12.

COMPARATIVE DATA FOR THE STATE—DECEMBER.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departue	Highest	Lowest	Total	Departure	Greatest	Least	Snow fall	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	29.1	+5.2	72	—18	0.45	—0.77	1.40	0.00	------	3	17	7	7
1891	32.3	+8.4	72	—14	2.41	+1.19	4.50	1.21	------	6	14	9	8
1892	18.9	—5.0	68	—29	1.65	+0.43	3.04	0.20	10.9	8	9	8	14
1893	22.0	—1.9	70	—21	1.31	+0.09	2.80	0.46	7.6	7	10	9	12
1894	30.1	+6.2	73	—17	0.95	—0.27	1.75	0.25	1.3	3	15	6	10
1895	25.4	+1.5	63	—16	1.63	+0.41	5.74	0.00	4.1	5	11	9	11
1896	30.8	+6.9	70	—10	0.65	—0.57	1.79	T	1.6	4	10	8	13
1897	18.0	—5.9	60	—25	1.65	+0.43	3.22	0.61	15.9	6	11	7	13
1898	18.1	—5.8	60	—25	0.48	—0.74	1.70	T	3.9	3	15	8	8
1899	22.6	—1.3	75	—19	1.61	+0.39	4.28	0.10	4.3	5	12	9	10
1900	26.9	+3.0	63	—10	0.45	—0.77	2.70	T	2.4	4	13	6	12
1901	20.5	—3.4	64	—31	0.93	—0.29	2.75	0.05	5.4	6	10	9	12
1902	20.1	—3.8	59	—20	2.23	+1.01	5.51	0.67	12.9	8	9	6	16
1903	19.6	—4.3	58	—27	0.41	—0.81	1.96	T	3.7	4	11	9	11
1904	23.4	—0.5	67	—19	1.44	+0.22	3.68	0.06	12.3	5	12	7	12
1905	27.0	+3.1	62	—11	0.52	—0.70	1.69	T	4.2	3	19	6	6
1906	25.7	+1.8	65	— 9	1.43	+0.21	2.81	0.37	1.4	6	11	7	13
1907	28.8	+4.9	62	— 9	1.00	—0.22	2.28	0.05	4.7	5	10	7	14
1908	27.2	+3.3	67	—17	0.57	—0.65	2.07	0.05	3.8	3	15	8	8
1909	15.1	—8.8	60	—26	2.18	+0.96	6.10	0.89	13.7	11	10	5	16
1910	23.4	—0.5	57	—14	0.37	—0.85	1.39	0.01	3.0	3	15	7	9
1911	27.9	+4.0	60	—24	2.57	+1.35	4.43	0.62	12.6	7	13	6	12
1912	29.2	+5.3	64	—13	0.74	—0.48	1.75	0.10	1.1	3	18	7	6
1913	32.0	+8.1	65	—13	1.02	—0.20	4.73	0.00	1.3	4	15	5	11
1914	15.7	—8.2	63	—31	1.30	+0.80	2.24	0.57	11.1	9	10	6	15
1915	25.0	+1.1	56	—10	0.69	—0.53	1.70	T	4.6	5	11	8	12
1916	18.7	—5.2	67	—25	1.04	—0.18	2.00	0.35	6.7	6	15	8	8
1917	14.5	—9.4	62	—40	0.56	—0.66	1.70	0.14	6.7	6	10	9	12

T indicates an amount too small to measure, or less than .005 inch precipitation and less than .05 inch snowfall.

Miscellaneous Phenomena.—Fog: 1st, 2d, 3d, 7th, 16th, 17th, 18th, 19th, 20th, 22d, 23d.

Halos (lunar or solar): 2d, 3d, 5th, 6th, 8th, 9th, 10th, 13th, 21st, 23d, 24th, 25th, 26th, 27th, 28th.

Haze: 16th, 17th, 18th, 19th, 27th.

Parhelia: 8th, 9th, 27th, 29th.

Sleet: 5th, 29th, 30th (at only four stations).

MONTHLY STATE DATA FOR 1917.

YEAR.	Temperature.				Precipitation.					Number of Days.				
	Mean.	Departure from normal.	Highest.	Lowest.	Average	Departure from normal.	Greatest	Least	Snow fall	.01 inch or more precipitation.	Clear.	Partly cloudy	Cloudy	Prevailing direction of wind.
January	17.0	— 0.9	60	—28	0.83	—0.22	2.07	0.17	7.2	4	17	8	6	nw.
February	15.2	— 5.3	68	—37	0.36	—0.79	1.19	T.	3.5	3	14	8	6	nw.
March	34.6	+ 1.3	85	—13	1.84	+0.07	4.35	0.57	6.2	6	14	8	9	nw.
April	45.5	— 3.2	88	17	4.55	+1.69	7.84	2.05	4.6	11	9	7	14	ne.
May	55.1	— 5.4	95	25	3.87	—0.70	7.33	1.69	0.6	10	15	8	8	ne.
June	66.0	— 3.1	100	32	6.65	+2.27	13.82	3.04	0	12	13	10	7	nw.
July	74.3	+ 0.2	106	38	2.27	—1.69	6.06	0.23	0	7	21	8	2	sw.
August	69.4	— 2.4	102	31	2.29	—1.39	6.31	0.70	0	7	19	8	4	nw.
September	62.6	— 0.8	97	28	2.90	—0.46	8.68	0.39	0	7	15	7	8	se.
October	42.9	— 7.9	85	0	1.41	—1.05	4.00	0.15	2.2	6	10	11	10	nw.
November	40.7	+ 5.7	77	3	0.28	—1.23	1.02	T.	1.4	3	14	6	10	sw.
December	14.5	— 9.4	62	—40	0.56	—0.66	1.70	0.14	6.7	6	10	9	12	nw.
Annual	44.8	— 2.6	106	—40	27.81	—4.16	13.82	T.	32.4	82	171	98	96	nw.

COMPARATIVE DATA FOR THE STATE—ANNUAL.

Year.	Temperature.					Precipitation in inches.			
	Mean annual.	Highest.	Date.	Lowest.	Date.	Annual.	Greatest annual.	Least annual.	Av. snowfall.
1890	48.0	110	July 13	—27	January 22	31.30	45.74	16.00	------
1891	47.3	106	August 9	—31	February 4	32.90	49.05	23.48	------
1892	46.6	104	July 11	—38	January 19	36.58	48.77	24.78	34.2
1893	45.7	102	July* 13	—36	January 14	27.59	33.27	19.19	37.2
1894	49.7	109	July 26	—37	January 25	21.94	29.81	15.65	19.2
1895	47.2	104	May 28	—33	February 1	26.77	35.25	18.57	26.0
1896	48.6	104	July 3	—20	January 4	37.23	51.60	28.68	22.6
1897	47.8	106	July* 23	—30	January 25	26.98	36.18	20.21	38.8
1898	47.7	103	August 20	—25	December 31	31.34	55.47	19.51	40.3
1899	47.3	104	September 6	—40	February 11	28.68	42.06	21.79	23.4
1900	49.3	103	August 3	—27	February 15	35.05	47.33	25.05	25.8
1901	49.0	113	July 22	—31	December 15	24.41	37.69	16.35	38.5
1902	47.7	98	July 30	—31	January 27	43.82	58.80	20.14	28.0
1903	47.2	101	August 24	—27	December 13	35.39	50.53	26.41	19.4
1904	46.3	100	July 17	—32	January 27	28.51	38.93	19.34	29.2
1905	47.2	104	August 11	—41	February* 2	36.56	52.26	24.66	38.3
1906	48.4	102	July 21	—32	February 10	31.60	44.34	20.63	32.8
1907	47.4	102	July 5	—21	February 5	31.31	43.90	19.93	24.0
1908	49.5	101	August 3	—18	January 29	35.26	49.98	24.11	22.7
1909	47.4	103	August* 15	—36	February* 15	40.31	53.48	27.20	49.0
1910	48.6	108	July 16	—35	January 7	19.87	27.99	12.11	23.4
1911	49.5	111	July* 3	—35	January 3	31.37	46.77	19.74	35.3
1912	46.4	104	September 8	—47	January 12	28.89	33.13	15.25	39.5
1913	49.7	108	July* 16	—25	January 8	29.95	45.18	20.31	25.4
1914	49.1	109	July 12	—31	December 26	31.93	44.11	23.30	27.5
1915	47.8	99	May 14	—32	January 28	39.53	51.15	27.29	31.3
1916	47.2	106	August 4	—34	January 13	28.90	46.34	22.48	29.5
1917	44.8	106	July 30	—40	December 29	27.81	36.00	20.78	32.4

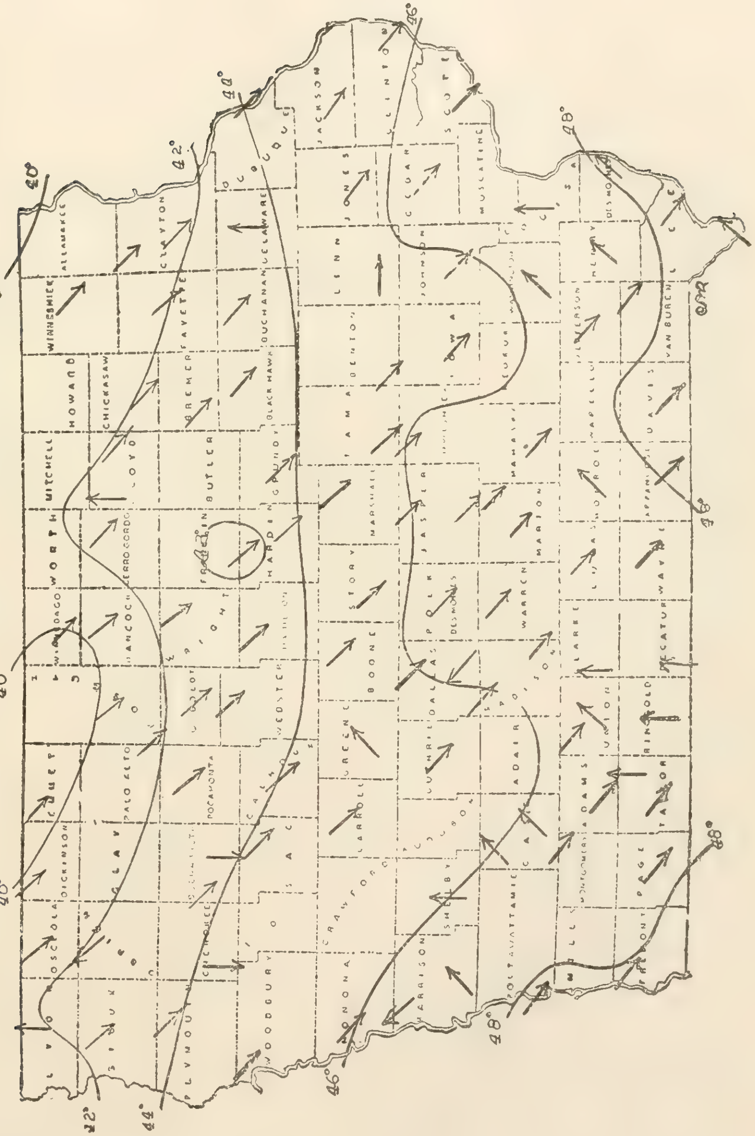
*And other dates.

DATES OF KILLING FROSTS, 1917.

STATIONS	Killing Frosts. Last in Spring.	Killing Frosts. First in Autumn.
Northern Division		
Algona	May 23	Oct. 6
Allison	May 23	Oct. 6
Alta	May 4	Oct. 8
Alton	May 8	Oct. 6†
Belmond	May 7†	Oct. 6†
Britt	May 23†	Oct. 6†
Charles City	May 5	Oct. 6
Decorah	May 24†	Sept. 11†
Elkader	May 24†	Sept. 11†
Estherville	May 22†	Oct. 6†
Fayette	May 23†	Sept. 11†
Forest City	May 7†	Sept. 27†
Humboldt	May 6†	Oct. 2†
Inwood	May 13†	Sept. 30†
Lake Park	----------	Oct. 6†
Le Mars	May 13†	Oct. 8
Mason City	May 23†	Oct. 11
Matlock	June 27†	Sept. 27†
New Hampton	May 23†	Oct. 6
Nora Springs	May 6	Sept. 11
Northwood	May 6†	Oct. 1†
Pocahontas	May 6†	Oct. 8
Postville	May 23†	Oct. 6†
Rock Rapids	May 23†	Oct. 6†
Sanborn	May 6†	Oct. 7†
Sibley	June 15†	Sept. 27†
Sioux Center	May 4†	Oct. 8†
Storm Lake	May 6†	Oct. 8
Washta	May 29†	Sept. 27†
Waverly	May 23	Sept. 11†
West Bend	May 25†	Oct. 8
Central Division		
Ames	May 7†	Oct. 1
Audubon	May 7†	Oct. 6†
Baxter	April 15	Oct. 6†
Belle Plaine	May 23	Sept. 11
Boone	May 5†	Oct. 8
Carroll	May 7	Oct. 8
Cedar Rapids	April 15	Oct. 8†
Clinton	May 23†	Oct. 6
Davenport	April 13	Oct. 8
Delaware	May 23†	Oct. 6†
Denison	May 24†	----------
Des Moines	April 15†	Oct. 6
Dubuque	April 15	Oct. 6
Fort Dodge	May 2†	Oct. 6†
Galva	----------	Oct. 6†
Grinnell	May 5	Oct. 6
Grundy Center	May 6†	Oct. 6†
Guthrie Center	May 8†	Oct. 6†
Harlan	May 7†	Sept. 27†
Independence	May 23	Sept. 11
Iowa City	May 23†	Oct. 6
Iowa Falls	May 23†	Sept. 11†
Jefferson	May 7†	Oct. 7†
Little Sioux	May 7†	Oct. 8†
Logan	May 7†	Oct. 6
Maquoketa	May 23†	Sept. 11†
Marshalltown	May 7†	Oct. 1
Monroe	May 5†	Oct. 6
Olin	May 23†	Oct. 1†
Onawa	May 7†	Oct. 8
Perry	May 7†	Oct. 6
Rockwell City	May 7†	Oct. 6
Sac City	May 4†	Oct. 6
Sioux City	May 5	Oct. 8
Tipton	May 7†	Oct. 7†
Toledo	May 23†	Sept. 11†
Waterloo	May 23†	Sept. 11†
Waukee	May 7	Oct. 6
Webster City	May 11†	Oct. 6
Williamsburg	May 23†	Oct. 6†
Southern Division		
Afton	May 5†	Oct. 6†
Albia	May 7†	Oct. 6
Allerton	April 26	----------
Atlantic	May 7	Oct. 6
Bedford	May 8	Oct. 6
Bloomfield	April 15†	Oct. 5
Bonaparte	May 5†	Oct. 6†
Burlington	April 16†	Oct. 8†
Centerville	May 5†	Oct. 6†
Chariton	May 30†	Oct. 6†
Clarinda	May 7†	Oct. 6
Columbus Jct.	May 23	Oct. 8
Corning	May 25†	Sept. 27†
Corydon	May 7	Oct. 6†
Creston	May 8†	Oct. 6
Earlham	May 7†	Oct. 6†
Fairfield	May 7†	Sept. 11†
Glenwood	May 7†	Oct. 8
Greenfield	May 7†	Oct. 8
Indianola	May 5	Oct. 6
Keokuk	May 5	Oct. 8
Keosauqua	May 7†	Oct. 6
Knoxville	May 7†	Oct. 6
Lamoni	May 4†	Oct. 6
Lenox	May 7†	Oct. 6
Mt. Ayr	May 4†	Oct. 8
Mt. Pleasant	May 5†	Oct. 6
Murray	May 4†	Oct. 6
Northboro	May 7	Oct. 6
Oskaloosa	May 7	Oct. 6†
Ottumwa	May 7†	Oct. 6†
Pella	May 6	Oct. 1†
St. Charles	May 4†	Oct. 8†
Sigourney	May 7†	Oct. 1
Stockport	May 7	Sept. 11†
Thurman	May 7†	Sept. 27†
Washington	May 23	Oct. 6
Winterset	May 8†	Oct. 8
Omaha, Neb.	April 9†	Oct. 8

†Date of last temperature of 32 or lower in the spring or first temperature of 32 or lower in the autumn (as the case may be) when frost was not reported.

MEAN ISOTHERMS AND PREVAILING WINDS, YEAR 1917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LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
O'BRIEN
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
CEDAR
SCOTT
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
JASPER
POWESHIEK
IOWA
JOHNSON
MUSCATINE
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
DES MOINES
POTTAWATTAMIE
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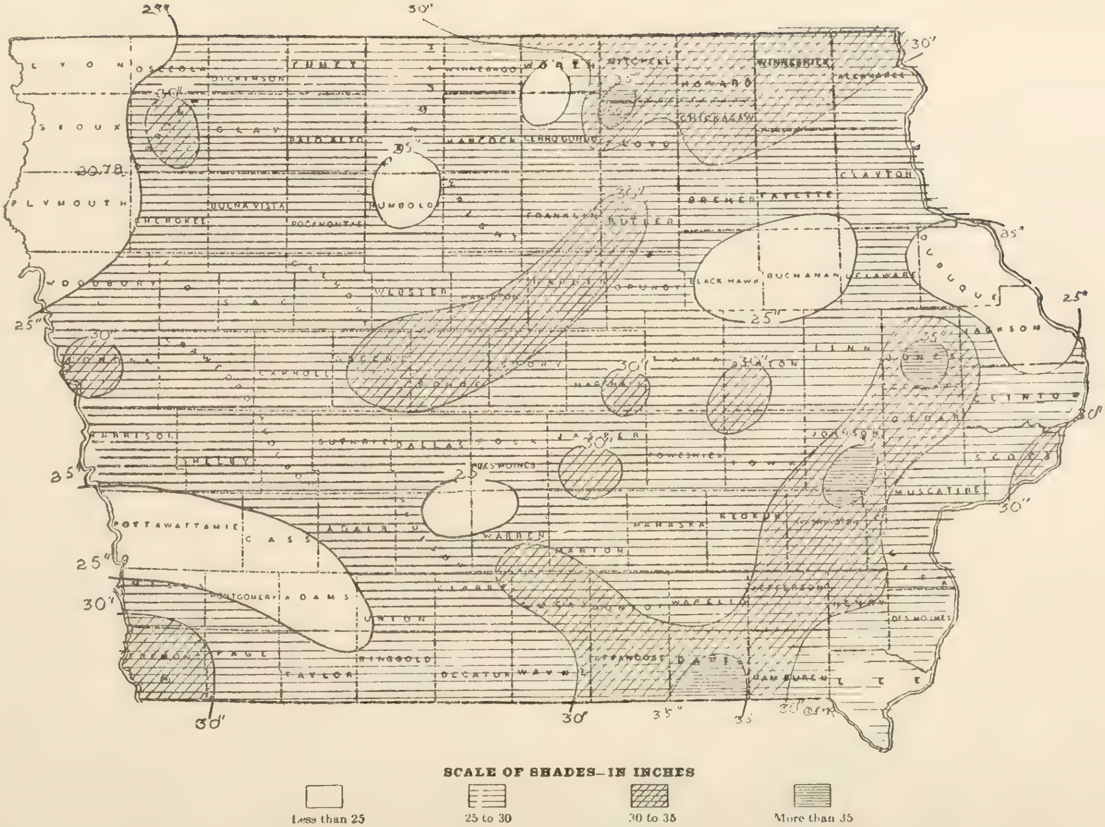
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE

TOTAL PRECIPITATION, YEAR 1917


25"
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WORTH
MITCHELL
HOWARD
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CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
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PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
FRANKLIN
BUTLER
BREMER
FAYETTE
CLAYTON
WOODBURY
SAC
WEBSTER
HAMILTON
HARDIN
GRUNDY
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
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DES MOINES
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
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MAHASKA
KEOKUK
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35
30"
SCALE OF SHADES—IN INCHES
Less than 25
25 to 30
30 to 35
More than 35

CLIMATE AND CROP REVIEWS

January was fair and mild until the 10th, when it was followed by a cold wave, and temperatures of zero and lower occurred in nearly all portions of the State during the next few days. A storm center attended by snow passed over the State on the 20-21st, and was followed by a cold wave with temperatures of 14 to 20° below zero in the northern counties. In the north part of the State, where the snow was heavy, it drifted and interfered seriously with rail traffic. Temperatures of 50 to 60°, the highest of the month, were general on the 28th. General snow on the 30-31st was followed by the most severe cold wave of the winter, which was sweeping southeastward across the State at midnight of the 31st.

February was the driest month of that name since state-wide observations began in 1890, and the coldest since 1905. It was, however, rather a pleasant winter month as there was only one bad storm which occurred on the 4th when the temperature was below zero all day north of Des Moines, and the minimum temperatures ranged from 8° below zero at Keokuk to 28° below zero at Lake Park. The velocity of the wind ranged from 39 miles an hour at Des Moines to 69 miles an hour at Sioux City. Over the greater part of the State these conditions were accompanied by falling snow, which made the worst blizzard for many years. Railroad traffic was suspended for several days on some lines in the northern counties. Although cold the remainder of the month was generally pleasant. Some oats were seeded in Davis County on the 26th.

March opened cold with temperatures of zero or lower in all but the southeastern counties on the 4th and 5th, the lowest being 13° at Lake Park on the 4th. Excepting a warm period, 9-11th, it continued cold till the 19th, after which it was warm. Precipitation, as in the two preceding months, was above normal in the northern, normal in the central, and below normal in the southern division. A severe glaze storm occurred on the 12th from Fort Dodge to Des Moines and east to the Mississippi River, which did $175,000 worth of damage to telephone and telegraph lines. By the close of the month grass was starting and field work was progressing rapidly in the southern counties. Oats and spring wheat seeding had been completed in a few southeastern counties; potato planting was reported well north in the central division, and sod plowing was being done as far north as Lyon County in the extreme northwest. Winter wheat, timothy, alfalfa, and clover both old and new were seriously winter-killed.

Cold, cloudy and rainy weather prevailed during most of April. More snow fell in the southern counties than in the preceding three months. Vegetation made slow progress. The acreage of oats, potatoes and corn was increased on account of so much winter-killing of winter wheat and meadows.

The temperature and rainfall for May were below normal, only May, 1892, and 1907 being cooler in the 28 years of record. Ice, heavy frost, or freezing temperatures were general during the first week, and frost on or about the 23rd damaged potatoes, corn, garden truck and fruit buds in some localities, particularly in the northeast and east central sections. Small grain made good progress but meadows and pastures were slow so that stock feeding had to be continued in many sections until the close of the month. By the 20th about 75 per cent of the corn had been planted, but frequent rains during the last decade delayed field work and some planting remained to be done at the close of the month, at which time early planted corn was up and was of good stand and color. Apples, plums and cherries were backward, coming into full bloom in the southern counties about the 15th and the northern counties about the 25th.

June was cool and wet, the rainfall being the greatest since 1890. In the central and southern counties many stations had the greatest rainfall of record in June; some had three times the June normal, and 30 to 40 per cent of the annual normal. Excessive rains during the first week, particularly in the south, overflowed lowlands, destroying thousands of acres of crops. Similar conditions prevailed in the northeastern portion of the State on the 23-26th. Much of the overflowed land was replanted to corn toward the close of the month. The last ten days of the month were favorable but at the close corn averaged 10 days to two weeks late.

Cool weather prevailed during the first two decades of July, after which it was warm, with abnormally hot weather the last four days. Precipitation was deficient but mostly well distributed till the last week when the drought accompanied by high temperature and hot winds damaged pastures, potatoes and garden truck. The season was generally favorable for small grain which, by the close of the month, was mostly harvested and some threshed, showing large yields and good quality. Corn was beginning to tassel in all sections on the 31st.

Droughty conditions that prevailed at the close of July were relieved by frequent and quite general showers during the first 12 days of August, followed by a nearly rainless week, after which only occasional local rains occurred. After the 4th, temperatures, especially at night, were generally so low that corn made slow progress and only the earliest fields had reached the roasting ear stage by the close of the month. Late potatoes and truck crops suffered somewhat from lack of moisture and very little fall plowing could be done.

Heavy to killing frost occurred on the 11th of September, in the northern and eastern sections which did considerable damage to corn, potatoes and other late crops. Corn made its best progress between the 13th and 18th, but during most of the month the deficient temperature and sunshine made its progress very slow. At the close of the month less than two-thirds of the crop was safe from any ordinary killing frost, and part of that was susceptible to serious damage by freezing temperatures.

October was 3.1° colder than October, 1895, which has heretofore been the coldest since state-wide records began in 1890. Killing frost occurred in some sections on the 1st, all but the southwest portion on the 6th and in all sections on the 8th. During a cold wave on the 28-30th, the temperature fell nearly to zero in the northern and western counties, the lowest being just zero at Galva. Precipitation was deficient except in a few northeastern and east-central counties, but a general snowstorm on the 28th-29th was remarkably heavy for the season in the northeastern counties. Corn was seriously damaged by the unfavorable conditions; very little of it was cribbed at the close of the month, and that which was cribbed heated so that it had to be dried and sorted; much soft corn in the fields molded.

November was mild and dry, but in spite of favorable conditions for drying, the husked corn, though carefully sorted, heated in the cribs so badly that it had to be spread out to dry. Husking ceased generally the last week of the month with 43 per cent of the crop still in the fields. Because of the cold in October and drought in November winter wheat made slow growth and is not entering the winter in resistant condition.

The mean temperature for December, 14.5°, is the lowest of record. Zero days were the most frequent of record. Sunshine was deficient and also the precipitation except in the northwestern and north-central counties. The ground was snow-covered about 25 days in the extreme northwestern portion of the State, and less than 15 days in the southwestern and east-central counties. Corn husking progressed, and not more than 15 per cent of the crop remained in the fields at the close of the month. Though severe temperatures prevailed for considerable periods, they were preceded and accompanied by porous snow covering, so it is believed that such winter wheat as was well established at the beginning of winter is in good condition.

WEATHER AND CROP BULLETINS

Summaries of Weekly Bulletins issued during the season of 1917, for the weeks ending on dates given:

Bulletin No. 1, April 10, 1917—

The severe drought that prevailed over the central and southern counties during the summer and autumn of 1916 continued in those districts during the whole of the winter, but abundance of moisture, in the form of snow, prevailed in the northern sections. The winter was also unusually cold, which, in connection with dry soil and lack of snow covering in the southern counties was very injurious to winter wheat, alfalfa and clover. At present the indications are not favorable for more than 60 per cent of a crop of winter wheat, and in some localities there will not be more than half of a crop of hay, on account of so much clover being winterkilled. However, with favorable weather—higher temperature and abundance of warm rain—the condition of those crops will improve materially. Some wheat ground has been reseeded already to spring wheat or oats, and if conditions do not improve, more of it will be planted to corn. Oats seeding is nearly finished, early potatoes have been planted and more than the usual acreage of spring wheat has been sown in the southern districts. Over the northern counties, where the snow remained on the ground until near the end of March, farm work is not as far advanced, but the soil is in fine tilth in all sections, and, with favorable weather during the coming week, work will progress rapidly. All live stock wintered well and the spring pig crop is receiving favorable mention. More than the usual amount of gardening has been and will be done. While the ground is dry and cold, and considerable damage has been done to grass and winter grains, yet other conditions are favorable, which, taken in connection with the strong determination of all of our farmers, Iowa, as usual, will be able to feed a large part of the world.

Bulletin No. 2, April 17, 1917—

The week was unseasonably cold and dry, the temperature being below the freezing point on several mornings, and the rainfall was almost nil until the 16th, when light to moderate showers occurred; but the weather was favorable for field work which has progressed rapidly. Seeding of spring wheat, oats, and barley is finished in the southern counties, and from 60 to 70 per cent finished in the northern sections. Later reports show that not only fall wheat, clover and alfalfa were badly winter-killed but also much timothy and blue grass, especially in central and southern districts. Winter wheat and clover is worse than indicated last week, the condition of wheat is now placed as low as 30 to 40 per cent. Many meadows are being plowed up and prepared for corn, the acreage of which will be greatly increased over last year. The acreage of potatoes, oats and spring wheat will also be increased, but the acreage of hay will be reduced. Stock is in good condition and the indications are favorable for a nearly normal pig crop.

Bulletin No. 3, April 24, 1917—

Higher temperatures and copious to heavy showers have been very beneficial to all vegetation, but in some localities, especially in the northwestern and southeastern quarters of the state, the rainfall was sufficient to retard field work somewhat. In the northwestern counties the rainfall ranged from one to more than four inches. Spring-sown grains of all kinds are coming up and show a good stand, and winter wheat has made considerable improvement. Plowing for corn is progressing rapidly with the soil in fine condition. If the weather continues favorable, corn planting will begin in the southeastern counties the latter part of this week, and the corn acreage will be decidedly increased. Much more than the usual amount of potatoes and small garden truck is being planted. Pastures are supplying some feed and grass is beginning to grow rapidly under the effects of warmth and abundant moisture. Fruit is still promising.

Bulletin No. 4, May 1, 1917—

The week was cold, cloudy and wet, there being an average daily deficiency of about 12 degrees in temperature and a large excess of precipitation. Snow fell on the 26th and 28th and freezing temperature was recorded over the greater part of the state on one or two mornings. It was too cold for much growth of vegetation, and the frequent and heavy rains have delayed farm work, though considerable progress was made in some localities in plowing. The rains, however, have been beneficial to small grain and grass and will prove to be of great benefit to all other crops as soon as warm weather comes. Oats, spring wheat and barley are up and show good stand generally. Some early potatoes and garden truck are also up. While winter wheat has made a little growth and shows slight improvement, more fields have been plowed up on account of the poor stand, thereby increasing the prospective corn acreage. Tests show high percentage of germination of seed corn and the quantity is sufficient. A few small patches of corn were planted early in the week in the southern counties. The prospect for a good tree fruit crop is still very promising, but raspberries, blackberries and strawberries were badly winterkilled in a few localities. Early plums and apples are in bloom in the extreme southeastern counties. The first bloom last year was reported on April 25th.

No. 5, May 8, 1917—

The first four days of the week were cold and wet, with heavy snow in nearly all parts of the state on the 3d. The last three days were clear but continued cold, with frost and freezing temperatures in many localities.

Field work was practically impossible and the growth of vegetation is at a standstill. About 25 per cent of the plowing for corn is yet to be done, but with the favorable conditions now prevailing plowing will progress rapidly during the coming week, and corn planting will be rushed in the southern counties. All spring sown small grain is doing nicely and winter wheat has improved some. All tree fruits seem to have escaped damage from the heavy frosts. Reports show serious damage to cane fruits. The cold, wet weather has been hard on young lambs, pigs and chickens.

The secretary of the State Horticultural Society reports condition of fruit on May 1st as follows: "Apples, 79 per cent; pears, 85; American plums, 85; cherries, 74; peaches, less than 5; grapes, 67; red raspberries, 56; black raspberries, 62; blackberries, 60; strawberries, 74 per cent of a full crop. The average condition of all fruits is 67 per cent, or one point below the May average of last year. The condition of apples and cherry trees is 9 per cent better than last year, and the cane fruits and strawberries about 10 per cent lower than a year ago. A severe cutting back of injured canes of raspberries will improve the quality of the fruit. Clear, warm weather for the next ten days will be a large factor in determining the size and quality of the fruit crop in the state."

Bulletin No. 6, May 15, 1917—

The temperature is still considerably below the normal, but the rainfall was light and the week was favorable for farm work, which progressed rapidly. Much corn ground was plowed and corn planting is well started with the soil in excellent tilth. Warmer weather prevailing during the latter part of the week has started growth and all conditions are now promising even though the season is late. Corn planting will be general during the coming week, and with favorable weather the bulk of the crop will be in by the 23d. The increased acreage and the extra amount of plowing to be done will, however, run planting up to the end of the month. The remnant of winter wheat is still improving and all other small grain is looking well. The acreage of corn, spring wheat, oats and potatoes will be larger than last year, but hay will be short. Some alfalfa is being sown with oats, the latter to be cut for hay. Early potatoes are coming up. Pastures continue backward, but are improving. All tree fruits are in full bloom over the southern half of the state, and are promising except possibly late winter apples, the bloom on which appears to be light in some localities.

Bulletin No. 7, May 22, 1917—

The weather was ideal for growth of vegetation and for field work up to Sunday afternoon when general rains set in with much lower temperature. There were, however, damaging wind, hail and electrical storms over the northeast and north central districts on the night of the 18th, which did some damage to crops and property. The temperature was much higher, with maxima up to or near 90 on two or three days. Under such favorable conditions all vegetation made very rapid growth and field work was rushed. About 70 to 75 per cent of a greatly increased corn acreage has been planted, and the early planted corn is up and shows a good stand. Considerable plowing for corn is yet to be done, especially on bottom ground. Winter wheat is stooling nicely and all small grain, grass, potatoes and garden truck made material improvement, and will be still further benefited by the copious to heavy rains at the close of the week, although the cool weather will check the rapid growth. Apples, cherries, plums and strawberries are still promising, but cane fruits and grapes will be short. An increased acreage of sugar beets is reported from some of the north central counties.

Bulletin No. 8, May 29, 1917—

The week was unusually cool, the average temperature being about 8 degreees below the normal. Frost occurred in some localities on two or three nights and ice formed in a few places on the 23d, but the damage was generally light. The heavy rains at the close of the preceding week, together with the showers on the 25th and 26th, delayed work somewhat and prevented the completion of corn planting in the southern districts, but most of the crop is in, and cultivation has begun in the earliest planted fields. The stand is reported to be very good, but cutworms are active on sod ground. All small grain continues in good condition and winter rye is heading in the southern counties. Potatoes, grass, garden truck and most fruits are also in good condition, but the weather is too cool for normal growth.

Bulletin No. 9, June 5, 1917—

Another cool, cloudy and wet week has further retarded field work. The average daily deficiency of temperature was about 7 degrees, and the rainfall was frequent and in many localities excessive, especially over the southern counties. Some damage was done by erosion on hillside plowed ground and flooding lowlands, yet as a whole the prospects are encouraging. All small grain, grass, potatoes and garden stuff are in fine condition. Corn is showing an excellent stand and but little replanting is necessary, and, while the weeds are getting a start, a few days of warm sunshine would enable the farmers to clean the fields. Warm sunshine would also stop the working of cutworms and wire worms which are now unusually active on sod ground.

Following in a summary of reports, showing average condition of crops on June 1st: Corn, 95 per cent; oats, 101; spring wheat, 98; winter wheat, 64; barley, 98; rye, 92; flax, 99; potatoes, 99; tame hay, 84; wild hay, 95; pastures, 90; alfalfa, 88 per cent.

Bulletin No. 10, June 12, 1917—

This has been the most unfavorable week of the season. The temperature was below normal and the rainfall was heavy and, in many localities, excessive, the amounts ranging from two to nearly seven inches. Practically all streams, especially over the southern half of the state, were at or above the flood stage. Hillside land was badly eroded and bottom ground flooded, resulting in much damage to the belated corn crop. Considerable replanting will be necessary and possibly a small percentage of the acreage will be used for some of the catch crops. As a whole, however, the prospect is very promising, and with but a few days of warm sunshine, which now seems probable, the fields will be cultivated and cleaned. The acreage is still much above that of last year. All small grain, grass, alfalfa and potatoes made rapid growth and alfalfa is about ready for the first cutting. In many localities oats are becoming too rank.

The following report of the Secretary of the State Horticultural Society shows the condition of fruit on June 1st: Apples, 80 per cent; pears, 61; American plums, 66; cherries, 71; grapes, 46; red raspberries, 53; black raspberries, 45; blackberries, 42; currants, 73; gooseberries, 77, and strawberries, 66 per cent of a full crop. The average of all fruits is 56 per cent, or three points above the average for June last year. The condition of the apple crop is 2 per cent above the June average for any year since a percentage record has been kept.

Bulletin No. 11, June 19, 1917—

Another cool week has further retarded the growth of corn, but abundance of sunshine and comparatively dry weather has been favorable for field work over the greater part of the state, and has greatly improved the color and general condition of the crop. Bottom grounds, however, are still in bad condition. Much replanting has been done, and more will be done if possible, but a considerable of the original corn acreage, especially in the southern counties, will be used for sorghum, Sudan grass, millet, etc., and some will probably have to be abandoned. Small grain, grass, potatoes and truck crops are doing well. Rye, early oats, timothy and clover are heading and the first cutting of alfalfa is being cured. Cold rains during the blooming period were injurious to strawberries. Other fruits are reported to be in good condition generally, although high winds have caused apples and pears to fall badly. Frost in the northern counties on the morning of the 15th damaged garden truck, and in some localities on low ground nipped corn and oats.

Bulletin No. 12, June 26, 1917—

The weather during the last seven days was exceptionally favorable for farming operations and the growth of crops. The temperature was about normal and the rainfall was generally light, except in the northern counties, where heavy showers occurred, accompanied in some localities by severe wind squalls which did some damage to crops. Corn cultivation progressed rapidly and most fields are fairly clean. Much replanting was done on late, overflowed bottom lands, but some fields intended for corn will be devoted to catch crops. All small grain continues to do well. Early oats, rye, barley and winter wheat are heading and in southern counties early oats are well filled. First cutting of alfalfa secured in good condition with fair yield. Meadows have improved, but the hay crop will be light. Potatoes and all garden truck are in excellent condition, and a good crop of early potatoes seems to be already assured. The set of apples and other tree fruits is generally good south of central Iowa, but over the northern counties the set is lighter on account of cold, rainy weather during the blooming season. The June drop of apples is not yet over, but is expected to be about normal. The damage to grapes by winterkilling in Pottawattamie county is not as great as was anticipated. A good rain would be very beneficial in the southwestern and south central counties.

Bulletin No. 13, July 3, 1917—

Another week of favorable weather has been very beneficial to the corn crop and for farm work. While the temperature was not above the normal, there were several moderately warm days, and one excessively hot day, which started the corn to growing rapidly. Fine progress was made in cultivating, and most fields are clean. Considerable corn was planted on the late flooded bottom lands in the southern counties, and much of it is up. The crop, as a whole, is a week to ten days later than usual, but is still very promising. All small grain is also late, and there will be very little, if any, winter wheat or rye harvested before the 10th, but the prospect for good yields is excellent. No haying has been done, but some clover is ready to cut in the southern counties. The crop, however, is poor on account of so much of it being winterkilled. Early potatoes are yielding well and all garden truck is in excellent condition. Strawberries and cherries are being harvested with fair yields.

Bulletin No. 14, July 10, 1917—

The weather during the week was almost ideal for farm work. There was a slight deficiency of temperature, and a decided deficiency of rainfall generally, except in a few favored localities, especially in the east central and extreme northwestern counties where heavy showers occurred. The fore part of the week was cool, with the night temperatures near the frost line in the northern districts, but the latter half of the week was much warmer. Corn made rapid growth and much of it has been "laid by." The crop is, however, very uneven in size. Some fields are nearly waist high, while many fields are only a few inches high. All small grain continues in good condition and filling well. The rye harvest has begun in Henry and Des Moines counties, and early oats and winter wheat harvest will become general in the southern counties by the latter part of the coming week. Truck crops are excellent.

The following summary shows the condition of crops on July 1st: Corn, 87 per cent; oats, 102; spring wheat, 99; winter wheat, 80; barley, 98; rye and flax, 94; potatoes, 106; hay, 83; pastures, 95 per cent. Last year on July 1st, the condition was as follows: Corn, 85 per cent; oats, 94; spring wheat, 92; winter wheat, 80; barley, 95; rye, 93; flax, 90; potatoes, 97; hay, 96; pastures, 100 per cent.

The state horticultural society shows condition of fruit as follows. Summer apples, 75 per cent; fall apples, 64; winter apples, 54; pears, 44; American plums, 34; domestic plums, 24; cherries, 62; grapes, 50; red raspberries, 51; black raspberries, 53; blackberries, 47 per cent of a full crop. The average for all fruits is 51 per cent, or 1 per cent higher than the average for July last year. The apple crop promises to be 20 per cent better than it was a year ago, while small fruits will be 20 per cent less.

Bulletin No. 15, July 17, 1917—

Though the average temperature was somewhat below the normal, yet there was sufficient warmth and sunshine during the week to maintain the rapid growth of corn. The moderately cool and dry weather prevailing since the first of the month has been especially favorable for small grain, which is now almost free from rust. The straw is, however, rather short, but the heads are filling well and promise good yields. Early oats, rye, barley and winter wheat harvest is well advanced in southern counties and will begin in central districts the coming week. Haying is progressing in all districts under satisfactory conditions generally, but the crop is light with little or no clover in the southern counties. Although corn made rapid growth, it is still small for the middle of July. However, the fields are clean, the color is good and the crop as a whole is very promising. Early potatoes are being harvested, but the tubers are mostly small and the yield is not quite up to expectations. A good soaking rain is needed for potatoes and pastures and would benefit corn. Considerable damage was done by hail in several localities, especially in Washington and northern Scott counties.

Following is the estimated crop acreage for this year: Corn, 10,242,000 acres; oats, 5,238,500; winter wheat, 133,900; spring wheat, 173,500; barley, 258,800; rye, 35,275; flax, 7,400; potatoes, 98,610; hay, 3,196,000; alfalfa 103,215; pastures, 8,995,300 acres. The acreage last year, as shown by township assessors, was as follows: Corn, 9,479,000 acres; oats, 5,199,269; winter wheat, 296,220; spring wheat, 172,421; barley, 265,048; rye, 36,886; flax, 7,658; potatoes, 88,691; hay, 3,702,855; alfalfa, 142,753; pastures, 9,461,680 acres.

Bulletin No. 16, July 24, 1917—

This has been the most favorable week of the season for rapid growth of corn and harvesting hay and small grain. The temperature was nearly normal and the rainfall was generally deficient, yet there were copious to heavy local showers in many localities, which gave sufficient moisture for present needs in those sections. Corn made very rapid growth. The earliest fields are showing tassels in all parts of the state and the late replanted fields are being "laid by." In the southern and central districts most of the early oats is in shock and the harvest has begun in the northern counties. Late oats and spring wheat harvest has begun in the southern part of the state, and will begin in the central section during the coming week. The conditions have been exceptionally favorable for small grain; the rather cool nights checking ripening and causing the heads to fill well. All small grain will be up to or above the average in quality and yield, but the small acreage of winter wheat will reduce the output of that crop. Rain is needed in most districts for corn, potatoes and pastures, and is urgently needed in some sections, but no serious damage has yet been done. The apple crop is much better in the southwestern counties than in other parts of the state. The indications are favorable for 80 to 95 per cent of the 1915 crop. The early apple harvest will begin in the southwestern counties during the coming week. Grapes in Pottawattamie county promise 30 to 50 per cent of a normal crop.

Bulletin No. 17, July 31, 1917—

Another week with high temperature and abundance of sunshine has been favorable for harvesting and haying, which have progressed rapidly. It was also favorable for the rapid growth of corn, much of which has tasseled. Corn generally is in fine condition, but in some localities where the soil is light and in spots where no rain has fallen the leaves are beginning to roll, showing the need of rain at an early date. The intense heat and lack of moisture is also injuring late potatoes and pastures.

The maximum temperatures were near or above 100 degrees on several days, and the rainfall was practically nil.

Threshing has begun, and early reports indicate good yields and fine quality of small grain. Oats yield from 40 to 100 bushels per acre; winter wheat is yielding better than expected, and barley is running as high as 37 bushels per acre. Unless rain comes soon, corn and potatoes will be seriously, injured.

Bulletin No. 18, August 7, 1917 —

Ideal weather prevailed over the greater part of the state for harvesting and threshing, and several copious to heavy showers occurred over the northeastern and southwestern counties, which were very beneficial to corn, late potatoes and pastures. All sections of the state received some rain, which together with the cooler weather checked the deterioration of corn that resulted from the intense heat and hot winds prevailing at the close of last week. The crop is now holding its own even in the driest sections and is in excellent condition in sections where showers have occurred. Threshing is general and progressing rapidly in the southern and central districts and will be general during the coming week in the northern districts. The large yields of all small grains are being maintained by later reports, and the quality of the grain is excellent. More rain is needed at once over the greater portion of the state for corn, potatoes, pastures and garden truck. The hot winds of last week seriously damaged gardens and caused apples to drop badly.

A summary of August 1st reports shows condition of corn on that date to be 92 per cent; pastures, 90; potatoes, 96, and flax, 96.

The secretary of the State Horticultural Society reports condition of fruit as follows: "Summer apples, 65 per cent; fall apples, 59; winter apples, 49; pears, 47; American plums, 43; domestic plums, 22; grapes, 52 per cent of a full crop. The average of all fruits is 44 per cent. There will be twice as many summer apples, one-third more fall apples, but only 9 per cent more winter apples than in 1916. Summer fruits should be utilized as they mature, either dried, canned, made into butter, marmalade or other products. Let no fruit go to waste than can be used for food."

Later.—Telegraphic reports received on the morning of the 7th indicate copious to heavy showers in nearly all parts of the State.

Bulletin No. 19, August 14, 1917—

The past week was characterized by unusually cool nights, and in some sections by heavy local showers. The average daily deficiency of temperature was about 7 degrees, and the average rainfall was somewhat below the normal, although all sections received some moisture and in many localities the amounts exceeded 1.50 inches. The showers interfered with threshing in some districts, and warmer weather is needed for the rapid development of corn, but as a whole the week was favorable for agricultural interests. Corn is still ten days to two weeks late, but otherwise it is in fine condition, and the earliest fields are now in the roasting ear stage. The rains were very beneficial to late potatoes, pastures and garden truck, and in some of the southern counties, where the rainfall was heavy, put the ground in fine condition for fall plowing, which has begun. Threshing is now general in the northern counties and is nearing completion in the southern part of the state. Late reports continue to show large yields and fine quality of all grains, and if final reports maintain the present estimate, the state will produce more than 235,000,000 bushels of oats, or an increase of about 50,000,000 as compared with last year, and 30,000,000 more than the largest crop ever before produced in the state.

Bulletin No. 20, August 21, 1917—

The average temperature of the past week was nearly normal and the rainfall was much below the seasonal average, there being only a few widely scattered and generally light showers. The weather was, however, ideal for threshing and stacking grain, and the increased warmth was more favorable for corn which made rapid progress toward maturity. The crop is ten days to three weeks late, and with normal weather conditions not more than 50 per cent of it will be out of danger of injury by frost by the end of September. The bulk of the crop will need the greater part of October without killing frost or freezing temperature. With dry, warm weather these estimates will be greatly reduced as to time, but the prospective yield will also be greatly reduced. Dry weather has already greatly reduced the prospective yield over the south central counties. One good, soaking rain and then normal temperature is needed for the best development of the crop. Rain is also badly needed for pastures, late potatoes, new seeding of clover, timothy and alfalfa. Considerable damage has been done in the east central and southeastern counties to young clover and alfalfa by grasshoppers, which seem to be increasing in numbers and spreading over large areas.

Bulletin No. 21, August 28, 1917—

The week was rather cool, and over the greater part of the state was very dry. The nights, especially, were very cool and there were only two or three warm days. Light frost occurred in the extreme nothwest portion of the state on the morning of the 28th, or one day later than last year. The conditions were favorable for threshing and for all outdoor work, but the ground is too dry in most sections for satisfactory plowing, though some of that work is being done. Corn made satisfactory progress considering the cool weather, but the crop is still late, ranging from fields just beginning to tassel to the advanced roasting-ear stage in some of the earliest fields. The outcome of the crop depends on the weather during the next six weeks. Conditions must be much better than normal to insure an average yield. The late potato crop is also in a precarious condition, depending on whether or not sufficient rain comes during the next two weeks. Grasshoppers have cleaned the meadows of all aftermath in many localities in the southern counties. Pasturage is short in most sections and farmers are feeding stock.

Bulletin No. 22, September 4, 1917—

The week was cool, there being an average daily deficiency of about 3 degrees. The nights espcially were very cool, and a trace of frost was observed on low ground in the northern counties on two mornings. The rainfall was very light and poorly distributed until the last day, when moderate to heavy showers occurred in nearly all districts. The rain will be of great benefit for late potatoes, pastures and for softening the ground for fall plowing preparatory to a greatly increased acreage of winter wheat and rye, but is now detrimental for the development of corn, which absolutely needs dry, warm, sunshiny weather to mature the crop before the average date of first killing frost. Reports received from crop correspondents on September 1st show that with normal weather there will be about 37 per cent of the corn crop safe from frost on September 20th; 59 per cent on September 30th; 87 per cent on October 15th, and at least 5 per cent of the corn will not be mature on October 31st. The average condition of corn as compared with the average of past years on September 1st was 84 per cent; pastures, 80; potatoes, 95, and flax, 94. On September 1, 1916, the conditions were as follows: Corn, 83 per cent; potatoes, 58; flax, 88; pastures, 77. The low condition of corn last year was due to droughty conditions over the southern counties, while this year the condition would be excellent if it were not for the fact that the crop is so late.

Bulletin No. 23, September 11, 1917—

Another cool, wet week has further delayed the maturity of the belated corn crop. The average temperature was about 5 degrees below the normal, and in many localities showers were frequent and the rainfall excessive. Frost occurred on the mornings of the 10th and 11th over the northern and eastern parts of the state. Over the southern and eastern districts the showers were accompanied by severe wind squalls, which blew down and tangled corn badly, and by hail, which also did considerable damage. Corn made fairly good progress toward maturity in the western counties, where there was little or no rain and considerable sunshine, but over the greater part of the state there has been but little advancement. Some of the earliest planted corn is beginning to dent, but the bulk of the crop is only in the roasting ear stage and much of it is still in the milk or dough stage. An early killing frost would seriously damage seed corn. The rains, however, were beneficial to pastures, meadows, truck crops and late potatoes and softened the ground for fall plowing, which is now being rushed. Some winter wheat has been sown, and if the conditions are favorable there will be a large increase in the acreage of this crop.

Preliminary estimates made September 1st show the average yield of winter wheat per acre, is 19 bushels; spring wheat, 21; oats, 50; barley, 37; rye, 20; timothy seed, 5 bushels per acre. If these estimates are maintained by final reports, the state will produce about 2,500,000 bushels of winter wheat; 3,600,000 of spring wheat; 260,000,000 of oats, 9,500,000 of barley and 700,000 bushels of rye. The area of timothy cut for seed was only 60 per cent of last year's acreage. Eighty per cent of the threshing was finished on September 1st. Tuesday, September 11, 10:00 a. m.—Telegrams just received from correspondents indicate that the frost has seriously damaged corn and garden truck on low ground in the northeast portion of the state, and that slight damage has occurred in the northwest and southeast portions.

Bulletin No. 24, September 18, 1917—

The week was very favorable for rushing the corn crop toward maturity. The temperature was considerably below the normal on the first day, but since then dry, warm weather has prevailed. The frost on the 11th did considerable damage in the northeastern counties, but the first estimates as to the extent of damage were evidently overdrawn. There is no doubt, however, but what the damage was severe in certain localities, especially along streams and in many low places, but damage was prevented in some of the river and creek valleys by fog, which prevailed on that morning. There was little or no injury on uplands, and while 30 or 40 per cent of the corn in the northeastern counties was frosted, not more than 5 per cent of it will be unmerchantable. The frost also did some damage to late potatoes, garden truck, buckwheat and beans. Silo filling has begun and some corn has been cut for fodder. Canning factories are running to full capacity on sweet corn, which is yielding about three tons per acre. Rapid progress is being made in preparing ground for fall wheat and some wheat has been sown. Fall varieties of apples are being harvested with fairly good yields. More rain would be beneficial for pastures and to keep the ground in condition for plowing.

Bulletin No. 25, September 25, 1917—

The last seven days were fairly favorable for maturing corn, although the nights were too cool for the best results, and rain fell on two days over the northern districts, which had a tendency to retard the drying of the crop. Probably one-half to two-thirds of the crop is now safe from injury by an ordinary killing frost, and with clear, warm weather and drying winds the most of the remainder will be safe in ten days or two weeks, but even with the best of weather at least five per cent of the crop will not mature. Much corn is being cut for fodder or silo and this work will be rushed during the coming week. Considerable seed corn has been gathered. More than the usual amount of fall plowing is being done in the northern districts, where sufficient rain fell during the week to put the ground in good condition, and considerable fall wheat has been sown, but over the larger part of the southern sections the ground is too dry to plow or germinate the wheat already sown. Potatoes are being dug, wih fair to good yields and of good quality. Pasturage is generally short and stock is being fed in some localities. Some second growth clover has been cut for seed, with heads well filled.

Bulletin No. 26, October 2, 1917—

The average temperature for the week was about 2 degrees below the normal, and light to heavy frosts occurred on two or three mornings in practically all parts of the state, the heaviest being in the eastern counties. Corn made fairly good progress considering the cool weather, but fully one-third of the crop is not yet safe from an ordinary killing frost and much more than that would be seriously damaged by freezing temperatures. Not more than 80 or 85 per cent will be safe by October 15th, and from present indications from 5 to 10 per cent of the crop will require all of October and at least 5 per cent is hopeless. The southwestern and west central districts show the best condition and the central district the poorest. However, there is enough of the crop mature in all districts to insure sufficient seed for next year and the seed is now being gathered in large quantities. Much of the late bottom-land corn is being cut for fodder and many silos are being filled. Considerable corn is still in the roasting ear stage and as green as in July. Plowing and seeding of winter wheat and rye has been handicapped in the southern and central districts by dry weather, but over the northern counties there has been a decided increase in the acreage of winter wheat and rye sown. The acreage of clover cut for seed will be much less than the normal, and large areas of last spring's seeding of clover and alfalfa have been destroyed by grasshoppers. Cattle are on feed in many localities on account of shortage of pasturage. Rain is badly needed for pastures, plowing and fall-sown grains, but corn must have dry, warm weather.

Bulletin No. 27, October 9, 1917—

The week was much colder and drier than usual, the temperature being about 7 degrees below the normal, and the rainfall was practically nil. The frost of October 1st was much more damaging over the southeastern counties than was reported last week; the one on the 6th was killing in all parts of the state except over the extreme western and southwestern counties and the hard freeze on the 8th was general in all districts.

About 40 per cent of the corn in the northeastern counties has been seriously damaged, with less injury toward the west and south to the extreme southwestern corner of the state, where the damage probably did not exceed more than 1 to 3 per cent and most of that only slight.

Considering the crop as a whole, about 70 to 75 per cent was fully mature, 10 to 15 per cent was slightly damaged and the remainder will be soft or chaffy, depending on the character of the weather during the next few weeks. The total yield will be greater than last year, and the condition of the crop in the northeastern district is much better than it was in 1915 when killing frost and freezing temperature occurred in that district on August 30th. A great deal more than the usual amount of the crop is in shock or silo on account of the shortage of the hay crop. Much excellent seed corn has been gathered and much more should be selected at once from the best of the frosted fields and properly cared for, as good seed corn will be in demand next spring. Pop corn husking will begin in Ida and Sac counties in about ten days. Both the yield and quality of this crop is good. The yield of potatoes is turning out fairly well, the quality is generally good and the output will be much larger than last year on account of a greatly increased acreage. It is thought that winter apples may have been damaged by the hard freeze on the

8th. Good soaking rains are now needed for fall sown grains, grass lands and for the water supply, then clear, cool weather for drying out the corn.

Notwithstanding the fact that fall grains were badly winter-killed and that the planting season was cold and wet and the summer unusually cool, Iowa has done her share toward feeding the nation and the world.

The small grain crops were exceptionally good; there will be considerably more than the normal amount of corn and the truck crops were excellent.

IOWA CROP REPORT, JUNE 1, 1917.

Following is a summary showing the condition of crops on June 1st, as compared with the average of past years on that date:

Corn, 95 per cent; oats, 101; spring wheat, 98; winter wheat, 64; barley, 98; rye, 92; flax, 99; potatoes, 99; tame hay, 84; wild hay, 95; pastures, 90; alfalfa, 88 per cent. Last year on June 1st the conditions were as follows: Corn, 84 per cent; oats, 98; spring wheat, 96; winter wheat, 78; barley, 97; rye, 92; flax, 92; potatoes, 95; hay, 98; pastures, 102; alfalfa, 93 per cent.

The Secretary of the State Horticultural Society reports the condition of fruit as follows: "Apples, 80 per cent; pears, 61; American plums, 66; Domestica plums, 56; Japanese plums, 51; cherries, 71; grapes, 46; red raspberries, 45; black raspberries, 45; blackberries, 42; currants, 73; gooseberries, 77; strawberries, 66 per cent of a full crop. The average of all fruits is 56 per cent, or three points above the average for June last year. The condition of the apple crop is 2 per cent above the June average for any year since a percentage record has been kept by the Society. Grapes, raspberries and strawberries were injured during the winter in the southern part of the State, where there was no snow covering to protect them."

IOWA CROP REPORT, JULY 1, 1917.

Acreage of Farm Crops and Estimated Condition of Staple Crops.

Reports received July 1st, from township correspondents of the Iowa Weather and Crop Service, show the following results as to the acreage and average condition of staple farm crops:

Corn.—The acreage planted this year, after making allowance for the acreage lost by floods and washing, is 10,242,000 acres, or 866,000 acres more than last year, as shown by Township Assessors. The condition was 87 per cent, or 2 per cent better than on July 1, 1916. The plants are small for the time of the year, but the color is good, the fields are generally clean, and the crop is making rapid advancement.

Oats.—Area seeded, 5,238,500 acres, or 169,366 acres more than last year, and the condition is 8 per cent better than a year ago.

Winter Wheat.—On account of winter-killing, the acreage is reduced from 296,800 acres, as shown by the township assessors' reports to 133,900 acres, and the condition is the same as last year, 80 per cent.

Spring Wheat.—Area sown, 173,500 acres, or an increase of about 2,000 acres over last year, and the condition is 7 per cent better, or 99 per cent. The loss in acreage of wheat, hay, especially clover, and pastures is more than made up in the increase in acreage of corn, oats and potatoes.

Barley.—Acreage sown, 258,800 acres or a decrease of 2,000 acres. The condition is, however, 3 per cent better than last year, when it was 95 per cent.

Rye.—*Acreage*, 35,275 acres, which is nearly the same as in 1916. The condition is 94 per cent, or one per cent better than last year.

Flax.—Acreage, 7,400, as compared with 7,300 in 1916. Condition, 94, or 4 per cent better than last year.

Potatoes.—Acreage 98,810, increase almost 11,000 acres, and the condition is 106, or 9 per cent better than last year.

Hay.—Acreage of tame and wild hay, 3,196,000, or 452,000 acres less than in 1916. The condition is 83 per cent, or 13 per cent below last year.

Alfalfa.—Acreage, 103,215; decrease, 50,000 acres.

Pastures.—Acreage, 8,995,300; decrease, 400,000 acres; condition, 95 per cent.

Fruit.—The Secretary of the State Horticultural Society reports the condition of fruit on July 1st to be as follows:

Summer apples, 75%; fall apples, 64%; winter apples, 54%; pears, 44%; American plums, 43%; Domestica plums, 24%; Japanese plums, 15%; cherries, 62%; grapes, 50%; red raspberries, 51%; black raspberries, 53%; blackberries, 47%; currants, 56%; gooseberries, 76% of a full crop. The average for all fruits is 51%, or 1% higher than the average for July last year. The apple crop promises to be 20% better than it was a year ago, while the small fruits will be 20% less than they were last year. Insects and fungus diseases about normal. Twig blight more abundant than usual.

IOWA CROP REPORT, AUGUST 1, 1917.

Following is a summary showing the condition of crops on August 1st as compared with the average of past years on that date: Corn, 92 per cent; pastures, 90; potatoes, 96; flax, 96 per cent. Last year on August 1st the condition of corn was 90 per cent; pastures, 91; potatoes, 81; flax, 90 per cent.

Harvesting began about a week later than usual, and as a result there had not been enough threshing done by the close of the month to give a reliable estimate as to the average yield of small grains.

The report of the Secretary of the State Horticultural Society show the condition of fruit on August 1st to have been as follows: Summer apples, 65 per cent; fall apples, 59; winter apples, 49; pears, 47; American plums, 43; domestic plums, 22; Japanese plums, 17; grapes, 52 per cent of a full crop.

The average for all fruits is 44 per cent of a full crop. There will be twice as many summer apples, one-third more fall apples, but only 9 per cent more winter apples than in 1916. There will be a few more pears, though plums and grapes will not be more abundant than they were last year.

Summer fruits should be utilized as they mature, either dried, canned, made into butter, marmalade or other products that can be saved for future use. Let no fruit got to waste than can be used for food.

IOWA CROP REPORT, SEPTEMBER 1, 1917.

Following is a summary showing the condition of crops on September 1st, as compared with the average of past years on that date: Corn, 84 per cent; potatoes, 95; flax, 94; pastures, 80 per cent. On September 1, 1916, the conditions were: Corn, 83; potatoes, 58; flax, 88; pastures, 77 per cent.

Corn is unusually backward. Practically all of the earliest planted fields are only in the roasting ear stage and much of the crop is still in the milk or dough stage.

Preliminary reports indicate the average yield of winter wheat to be 19 bushels per acre; spring wheat, 21; oats, 50; barley, 37; rye, 20; timothy seed, 5 bushels per acre. If these estimates are maintained by final reports the State will produce about 2,500,000 bushels of winter wheat; 3,600,000 of spring wheat; 260,000,000 of oats; 9,500,000 of barley and 700,000 bushels of rye. The area of timothy cut for seed was only 60 per cent of last year's acreage. Eighty per cent of the threshing had been finished on September 1st.

FINAL CROP REPORT OF THE STATE, 1917.

Following is a summary of reports from crop correspondents of the Iowa Weather and Crop Service, showing the average yield per acre and total yields of staple soil products, and the average price at the nearest station, December 1, 1917. This report does not include or take into consideration live stock, poultry or dairy products.

The crop season of 1917 was an exceptional one; most of the crops being produced under great handicaps. The winter of 1916-17 was cold and the precipitation was generally deficient, particularly in the southern portion of the State. The snowfall was about normal in the northern counties, but very deficient in the southern sections until March and April, when in the latter month it exceeded the total amount for the three preceding months. A glaze storm on the night of December 25-26 covered nearly the entire state with a heavy coating of ice; and another on March 12-13 covered the region from the Des Moines to the Mississippi Rivers. April, May, and June were abnormally cold, and April and June were excessively wet. Cold weather continued until July 20th, after which it was hot and relatively dry till August 4th. The remainder of August was cool and the showers were light and scattered. Drought and grasshoppers became serious in some of the south-central and southeastern counties. September was cooler than normal with heavy frosts on the 11th, on the lowlands in the northern and eastern sections; there was, however, a warm period from the 13th to the 18th. Killing frosts occurred in some sections of the State on October 1st, in all but the southwestern portion on the 6th, and throughout the State on the 8th; and the entire month was cold, being the coldest of record, and 3.1 degrees colder than October, 1895, which heretofore held the record. Sunshine was unusually deficient, particularly in the northeast portion where it was less than one-third of the possible amount. November was much warmer and drier than usual with about the normal amount of sunshine.

Considering the various crops in their relation to the weather, some of the outstanding features may be noted as follows: Winter-killing was unusually prevalent, particularly in the central and southern divisions. Wheat, rye, clover, both old and new, timothy, blue grass, lawns, cane fruits and grapes all suffered seriously.

The winterkilling of wheat was due to the following causes: First, the plants were not well established at the beginning of winter. In the central and southern divisions, which include the bulk of the winter wheat acreage, drought, August 16-31, September 13-24, and October 1-14, 1916, delayed plowing, seeding and germination. November was warm with plenty of moisture, and the young plants got a fair start but were not sufficiently strong to resist the rigorous winter that followed. Second, the general glaze storm of Christmas night covered almost the entire area with a smothering coat of ice. Third, the snow covering was absent or generally deficient. In the central portion of the State there was considerable snow covering, but subsequent weather conditions reduced it to an impervious layer of ice equal in smothering properties to a covering of glaze. Where the snow covering was absent the plants were subjected to unusual extremes of temperature. Fourth, drought prevailed throughout the winter. The last three causes were responsible for the winterkilling of grasses.

In the northern portion of the State, where the snow covering was deeper, more porous and continuous, grasses and the small acreage of winter wheat that was sown did not suffer so seriously. The warm and normally moist March and the cool and generally wet spring and early summer were especially favorable for oats, spring wheat and barley, all of which made large yields, barley making a record yield. The yield of winter wheat on the acreage that was considered promising enough to let grow was good.

The corn acreage was greatly increased by plowing up the winterkilled wheat fields and meadows. This, together with the cold, wet, unfavorable spring, started it out about two weeks late. Large areas in the southern portion of the State were washed out or drowned out and replanted, some as late as the closing days of June. The abnormally cool weather of May, June, and the first half of July did not give the corn a chance to catch up. About the only good corn weather of the season occurred from July 20th to August 4th. Two weeks more of good corn corn weather would have matured a phenomenal crop, but a cold and cloudy October caught it unprepared. The yield is good but the quality is unusually poor. November, though much warmer and drier than normal, closed with the crop generally unfit for cribbing. Seed corn gathered since October 8th almost without exception shows very low germination tests. Considerable care will need to be exercised before another planting season to discover the unreliable seed, locate supplies of good seed and effect the proper distribution. Droughty conditions and grasshoppers during August, in some of the south-central and southeastern counties, made the pastures brown and bare. The Iowa Weather and

Crop Service was consulted by several cattle men seeking pasturage in more favorable sections of the State to avoid the use of high-priced dry feed or immature corn fodder.

Looking forward to the winter wheat crop of 1918, it should be noted that in certain portions of the State, particularly the south-central and western, plowing, seeding and germination were delayed by dry, hard soil and droughty conditions, and October was too cold, and in some sections grasshoppers kept it eaten down so that the plants are not entering the winter in a resistant condition. There has been a great increase in the acreage sown as compared with the area harvested in 1917, but the acreage is considerably below the normal, and in order that we may have a normal wheat crop next year, it will be necessary to greatly increase the acreage of spring wheat.

The yields and values are as follows:

Corn.—The estimated acreage was 10,242,000 acres, or 763,000 acres more than in 1916; average yield, 40 bushels per acre; total yield, 409,667,000 bushels; average price, 97 cents per bushel; total value, $397,376,990. Fifty-one per cent of the crop was reported to be soft or immature and only 57 per cent had been husked on December 1st.

Oats.—The estimated area harvested was 5,238,500 acres, or about 50,000 acres more than in 1916. Average yield, 46 bushels; total yield, 239,416,200 bushels; average price, 61 cents; total value, $146,043,882.

Spring Wheat.—Area harvested, 173,460 acres; average yield, 18 bushels per acre; total yield, 3,199,820 bushels; price per bushel, $1.94; total value, $6,207,652.

Winter Wheat.—Area harvested, 133,930 acres; average yield per acre, 18 bushels; total yield, 2,397,560; average price, $1.97 per bushel; total value, $4,723,193.

Barley.—Area harvested, 258,775; average yield per acre, 35 bushels, which is a record for the State; total yield, 9,111,590 bushels; average price, $1.15; total value, $10,478,328.

Rye.—Average yield, 20 bushels per acre; total yield, 722,410 bushels; farm price, $1.58; total value, $1,141,408.

Flax Seed.—Average yield, 11 bushels; total yield, 80,810 bushels; total value at $2.87 per bushel, $231,925.

Timothy Seed.—Area harvested, 290,000 acres; average yield, 4.5 bushels; total yield, 1,306,093; total value, at $3.37 per bushel, $4,401,533.

Clover Seed.—Area harvested, 61,560 acres; average yield, 1.5 bushels; value at $14.00 per bushel, $1,292,760.

Potatoes.—Area harvested, 99,610 acres; average yield, 109 bushels; total yield, 10,793,600 bushels; average price, $1.32; total value, $14,247,552.

Hay (Tame).—Average yield, 1.3 tons per acre; total yield, 3,584,400 tons; average price, $18.82 per ton; total value, $67,458,408.

Hay (Wild).—Average yield, 1.2 tons; total yield 636,947 tons; average price, $14.79 per ton; total value, $9,420,446.

Alfalfa.—Area 103,215 acres; average yield, 3.4 tons; total yield, $353,830 tons; average price, $23.40 per ton; total value, $8,279,622.

TABULATED CROP SUMMARY.

	Acres	Average Yield	Average Price	Total Yield	Total Value
Corn	10,242,000	40 Bu.	$ .97	409,667,000	$ 397,376,990
Oats	5,238,500	46 Bu.	.61	239,416,200	146,043,882
Spring Wheat	173,460	18 Bu.	1.94	3,199,820	6,207,652
Winter Wheat	133,930	18 Bu.	1.97	2,397,560	4,723,193
Barley	258,775	35 Bu.	1.15	9,112,590	10,479,478
Rye	35,275	20 Bu.	1.58	722,690	1,141,850
Flax Seed	7,430	11 Bu.	2.87	80,810	231,925
Timothy Seed	290,243	4.5 Bu.	3.37	1,306,093	4,401,533
Clover Seed	61,560	1.5 Bu.	14.00	92,340	1,202,760
Potatoes	99,610	109 Bu.	1.32	10,793,600	14,247,552
Hay (Tame)	2,671,100	1.3 tons	18.82	3,584,400	67,458,408
Hay (Wild)	524,912	1.2 tons	14.79	636,947	9,420,446
Alfalfa	103,215	3.4 tons	23.40	353,830	8,279,622
Pastures and Grazing				Estimated	100,000,000
Ensilage				"	16,686,000
Sweet Corn				"	5,800,000
Pop Corn				"	900,000
Buckwheat				"	370,000
Fruit Crop				"	7,000,000
Garden Truck				"	8,000,000
Miscellaneous				"	12,000,000
Total					$ 822,061,291

The value of soil products for 1916 was $ 597,165,673

IOWA CROPS, 1917—NUMBER OF ACRES BY COUNTIES

Counties	Corn	Oats	Winter Wheat	Spring Wheat	Barley
Adair	110,000	37,000	1,000	1,000	2,000
Adams	77,000	22,500	2,400	280	650
Allamakee	42,000	42,300	650	1,300	5,800
Appanoose	44,000	17,000	1,200	50	----------
Audubon	89,000	37,000	800	2,200	6,200
Benton	142,000	81,000	200	470	8,000
Black Hawk	109,000	57,500	400	230	2,800
Boone	122,000	67,000	1,000	400	600
Bremer	66,000	49,000	130	450	1,200
Buchanan	104,000	64,000	250	300	1,900
Buena Vista	131,000	83,000	60	150	950
Butler	107,000	76,000	50	480	1,170
Calhoun	133,000	100,000	100	150	620
Carroll	123,000	69,000	500	2,800	1,900
Cass	126,000	37,000	3,000	2,900	4,700
Cedar	111,000	38,000	1,000	400	10,200
Cerro Gordo	94,000	70,000	50	400	2,250
Cherokee	130,000	82,000	20	350	2,400
Chickasaw	66,000	60,500	60	1,700	2,250
Clarke	63,000	19,000	1,000	----------	60
Clay	113,000	76,000	100	550	2,900
Clayton	79,000	63,000	1,350	1,000	9,000
Clinton	121,000	44,000	1,700	1,300	8,000
Crawford	167,000	65,000	1,700	10,000	4,400
Dallas	140,000	56,000	3,000	400	450
Davis	53,000	32,000	1,300	50	40
Decatur	69,000	23,000	2,400	50	20
Delaware	91,000	54,500	100	350	7,000
Des Moines	69,000	29,000	2,400	300	150
Dickinson	58,000	47,000	60	650	1,450
Dubuque	66,000	46,000	500	1,000	3,100
Emmet	63,000	54,000	----------	130	800
Fayette	90,000	70,000	200	1,000	4,600
Floyd	88,000	73,000	130	700	1,600
Franklin	115,000	82,500	50	330	2,100
Fremont	150,000	11,400	8,000	750	120
Greene	132,000	65,500	1,100	100	650
Grundy	107,000	74,300	100	170	2,900
Guthrie	112,000	47,500	2,000	1,100	1,100
Hamilton	130,000	91,000	150	200	300
Hancock	104,000	87,000	40	1,600	2,600
Hardin	119,000	70,000	130	500	1,300
Harrison	160,000	25,000	6,500	15,000	1,500
Henry	75,000	29,000	1,100	100	85
Howard	52,000	56,500	150	860	4,400
Humboldt	93,000	66,700	80	200	1,000
Ida	97,000	53,000	90	1,550	3,000
Iowa	96,000	41,500	650	700	1,350
Jackson	62,000	29,000	1,200	1,000	2,300
Jasper	158,000	60,000	2,000	2,000	400
Jefferson	68,000	26,000	1,000	300	50
Johnson	102,000	41,000	600	500	850
Jones	79,000	32,000	300	500	4,700
Keokuk	109,000	46,500	750	1,300	120
Kossuth	175,000	141,000	100	550	500
Lee	56,000	22,000	2,000	50	300
Linn	117,000	56,000	400	700	1,600
Louisa	67,000	27,000	3,000	50	150
Lucas	51,000	19,300	800	120	60
Lyon	131,000	100,000	100	1,500	5,700
Madison	103,000	32,000	2,700	900	1,550
Mahaska	115,000	49,000	1,400	700	280
Marion	100,000	31,000	5,000	1,500	300
Marshall	125,000	60,500	500	600	430
Mills	111,000	23,000	2,000	4,000	600
Mitchell	65,000	82,000	20	1,300	2,700
Monona	155,000	33,000	13,000	13,000	1,600
Monroe	46,000	14,000	800	320	60
Montgomery	106,000	22,500	3,000	2,800	400
Muscatine	76,000	24,000	850	560	5,200
O'Brien	112,000	86,000	140	800	7,000
Osceola	79,000	70,500	----------	100	8,000

IOWA CROPS, 1917—NUMBER OF ACRES BY COUNTIES—Continued

Counties	Corn	Oats	Winter Wheat	Spring Wheat	Barley
Page	125,000	21,000	7,000	1,400	200
Palo Alto	89,000	64,000	50	150	800
Plymouth	202,000	96,000	1,200	32,000	5,100
Pocahontas	127,000	97,000	180	150	800
Polk	104,000	42,000	9,000	1,400	50
Pottawattamie	223,000	47,000	7,000	5,400	7,200
Poweshiek	118,000	46,000	350	800	1,400
Ringgold	82,000	26,000	1,900	100	100
Sac	120,000	72,000	40	50	3,700
Scott	84,000	26,000	1,200	830	21,500
Shelby	138,000	49,500	800	3,800	8,300
Sioux	159,000	108,000	700	13,000	14,000
Story	146,000	74,000	300	200	50
Tama	135,000	69,500	250	1,900	8,500
Taylor	103,000	27,000	1,600	130	300
Union	70,000	22,000	800	250	140
Van Buren	54,000	21,000	1,200	30	----------
Wapello	65,000	22,000	2,000	100	70
Warren	96,000	24,500	7,500	570	460
Washington	97,000	42,000	1,500	300	300
Wayne	72,000	26,000	1,000	200	50
Webster	146,000	110,000	300	1,000	700
Winnebago	62,000	53,000	----------	3,000	4,450
Winneshiek	84,000	69,500	300	5,200	12,000
Woodbury	206,000	70,000	2,100	7,800	2,150
Worth	48,000	60,000	----------	2,000	3,700
Wright	121,000	84,000	50	400	1,400
Totals	10,242,000	5,238,500	133,900	173,508	258,775

IOWA CROPS, 1917—NUMBER OF ACRES BY COUNTIES—Continued

Counties	Rye	Flax	Potatoes	Tame Hay	Wild Hay	Alfalfa	Pastures
Adair	20	-----	1,150	29,000	2,200	100	108,000
Adams	110	-----	500	25,000	1,400	600	98,000
Allamakee	450	75	1,200	43,000	1,190	15	168,000
Appanoose	150	-----	700	36,000	590	40	109,000
Audubon	30	-----	650	26,000	1,970	1,100	68,000
Benton	450	-----	1,100	40,000	2,000	100	104,000
Black Hawk	1,150	-----	1,600	29,000	7,500	100	90,000
Boone	20	-----	1,700	19,000	7,200	280	73,000
Bremer	530	-----	800	17,000	18,400	60	59,000
Buchanan	700	-----	950	37,000	11,300	15	102,000
Buena Vista	50	60	1,200	22,000	10,400	720	70,000
Butler	900	-----	1,400	21,000	10,440	20	87,000
Calhoun	20	40	540	18,000	4,700	266	54,000
Carroll	30	-----	1,700	26,000	8,400	500	80,000
Cass	110	-----	1,350	33,000	1,100	800	108,500
Cedar	400	-----	940	41,000	150	160	94,000
Cerro Gordo	70	300	1,300	28,000	13,300	90	75,000
Cherokee	30	-----	1,250	23,500	8,000	2,500	75,000
Chickasaw	250	80	700	24,000	14,500	-----	80,000
Clarke	40	-----	250	23,000	60	50	91,000
Clay	100	180	640	22,200	12,900	700	75,700
Clayton	600	-----	1,900	57,000	1,000	80	161,000
Clinton	1,050	-----	1,200	45,000	1,700	200	130,000
Crawford	50	-----	1,600	40,000	5,200	4,400	111,000
Dallas	70	-----	500	18,500	2,800	600	90,000
Davis	500	-----	500	44,000	12	80	137,000
Decatur	200	-----	200	36,000	95	190	113,000
Delaware	2,000	-----	1,000	39,000	5,700	60	109,000
Des Moines	1,200	-----	900	19,000	70	500	78,000
Dickinson	30	420	350	13,000	11,600	1,000	60,000
Dubuque	300	-----	1,900	56,000	730	110	140,000
Emmet	80	215	400	16,500	7,300	75	54,000
Fayette	600	-----	1,300	51,000	10,200	20	140,000
Floyd	420	160	1,300	27,000	4,300	50	69,000
Franklin	100	100	1,400	28,000	9,000	50	80,000
Fremont	300	-----	900	7,000	2,700	6,200	60,000
Greene	-----	-----	500	22,000	6,000	300	72,000
Grundy	-----	-----	2,100	20,000	5,000	30	66,000
Guthrie	20	-----	550	27,000	3,600	350	101,000
Hamilton	-----	-----	750	23,000	6,000	175	69,000
Hancock	100	150	750	23,500	18,500	100	82,000
Hardin	50	-----	850	24,000	5,600	100	69,000
Harrison	80	-----	900	10,400	7,000	8,500	88,000
Henry	525	-----	420	22,000	-----	170	90,000
Howard	140	500	900	28,400	13,100	20	76,000
Humboldt	170	60	400	16,000	6,400	150	43,000
Ida	20	-----	800	21,000	1,900	1,200	57,000
Iowa	220	-----	1,200	24,000	450	140	108,000
Jackson	720	-----	1,250	45,000	1,050	130	173,000
Jasper	150	-----	800	34,000	500	170	123,000
Jefferson	250	-----	700	23,000	-----	25	96,500
Johnson	700	-----	1,100	34,500	425	170	104,000
Jones	450	-----	850	40,000	230	80	28,100
Keokuk	200	-----	640	34,000	50	75	113,000
Kossuth	100	700	1,500	33,000	34,000	275	111,000
Lee	6,300	-----	1,200	32,000	-----	280	119,000
Linn	800	-----	1,700	37,000	2,200	170	117,000
Louisa	1,200	-----	400	14,000	200	140	60,000
Lucas	20	-----	220	24,500	100	50	95,000
Lyon	50	-----	1,800	13,000	9,800	2,000	15,000
Madison	100	-----	600	27,000	1,000	200	131,000
Mahaska	170	-----	650	35,000	370	200	100,000
Marion	70	-----	500	26,000	320	400	114,000
Marshall	20	-----	1,000	31,000	300	100	78,000
Mills	200	-----	1,100	10,000	4,100	7,000	58,000
Mitchell	30	960	2,500	26,200	3,200	-----	70,000
Monona	50	-----	2,400	8,900	13,500	11,000	93,000
Monroe	100	-----	360	30,000	10	50	172,000
Montgomery	160	-----	600	16,000	650	3,000	70,000
Muscatine	2,800	-----	1,450	16,000	460	250	71,500
O'Brien	50	120	1,000	23,000	7,300	1,200	72,000
Osceola	30	160	900	14,000	7,000	175	43,000

IOWA CROPS, 1917—NUMBER OF ACRES BY COUNTIES—Continued

Counties	Rye	Flax	Potatoes	Tame Hay	Wild Hay	Alfalfa	Pastures
Page	450	------------	550	42,000	1,100	2,500	86,000
Palo Alto	190	500	500	15,000	20,000	210	60,000
Plymouth	500	------------	2,300	20,000	20,000	1,000	110,000
Pocahontas	150	100	650	17,000	11,000	200	50,000
Polk	100	------------	1,100	13,000	2,500	600	81,000
Pottawattamie	300	------------	2,700	30,000	8,400	14,000	130,000
Poweshiek	30	------------	800	26,000	100	140	100,000
Ringgold	270	------------	270	32,000	130	70	69,000
Sac	------------	40	700	23,000	4,600	830	66,000
Scott	1,750	------------	3,500	20,000	1,700	700	77,000
Shelby	150	------------	1,100	30,000	4,000	2,800	90,000
Sioux	50	------------	1,300	17,000	15,000	5,000	75,000
Story	40	------------	250	26,000	2,000	270	58,000
Tama	30	------------	1,200	34,000	1,200	140	127,000
Taylor	250	------------	550	31,000	560	775	106,000
Union	30	------------	630	23,000	450	80	100,000
Van Buren	500	------------	220	33,000	------------	225	135,000
Wapello	200	------------	750	26,000	------------	150	77,000
Warren	190	------------	500	29,000	500	150	140,000
Washington	100	------------	650	35,000	------------	120	112,000
Wayne	70	------------	150	31,000	50	70	97,000
Webster	------------	100	700	23,000	12,500	350	78,000
Winnebago	100	450	870	16,000	22,000	50	55,000
Winneshiek	350	300	1,200	47,000	4,700	25	140,000
Woodbury	160	------------	1,800	17,500	9,500	13,000	106,000
Worth	120	1,600	760	20,500	15,500	30	57,000
Wright	40	60	700	26,000	7,000	80	64,000
Total	35,275	7,430	98,810	2,671,100	524,912	103,215	8,995,300

TABULATED CROP SUMMARY FOR THE YEAR 1917

Counties	Corn		Oats		Spring Wheat		Winter Wheat		Barley	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels
Adair	38	4,180,000	50	1,850,000	16	16,000	15	15,000	45	90,000
Adams	33	2,601,000	43	967,500	21	5,900	16	38,400	41	26,700
Allamakee	37	1,554,000	45	1,903,500	20	26,000	26	16,900	31	179,800
Appanoose	37	1,628,000	58	986,000	18	900	15	18,000	----	----------
Audubon	39	3,471,000	34	1,258,000	18	39,600	28	22,400	33	204,600
Benton	41	5,822,000	49	3,969,000	18	8,500	18	3,600	40	320,000
Black Hawk	39	4,251,000	53	3,047,500	27	6,200	24	9,600	32	89,600
Boone	40	4,880,000	42	2,814,000	16	6,400	20	20,000	35	21,000
Bremer	37	2,442,000	44	2,056,000	23	10,300	18	2,300	35	42,000
Buchanan	33	3,432,000	48	3,072,000	17	5,100	21	5,200	37	70,300
Buena Vista	44	5,764,000	47	3,901,000	22	3,300	22	1,320	38	36,100
Butler	34	3,548,000	42	3,192,000	26	12,500	20	1,000	31	36,300
Calhoun	46	6,118,000	44	4,400,000	20	3,000	15	1,500	38	23,600
Carroll	45	5,535,000	41	2,829,000	18	50,400	20	10,000	39	74,100
Cass	39	4,914,000	37	1,369,000	17	49,300	16	48,000	34	159,800
Cedar	48	5,328,000	55	2,090,000	26	10,400	25	25,000	40	408,000
Cerro Gordo	41	3,854,000	45	3,150,000	19	7,600	19	950	30	67,500
Cherokee	46	5,980,000	55	4,510,000	20	7,000	22	440	34	81,600
Chickasaw	23	1,518,000	40	2,420,000	19	32,300	23	1,380	35	78,800
Clarke	39	2,547,000	51	969,000	20	800	14	14,000	30	1,800
Clay	43	4,859,000	41	3,116,000	18	9,900	22	2,200	25	72,500
Clayton	39	3,081,000	46	2,878,000	22	22,000	21	28,400	38	342,000
Clinton	43	5,203,000	49	2,136,000	24	31,200	14	23,800	35	280,000
Crawford	39	6,513,000	35	2,275,000	18	180,000	25	42,500	30	132,000
Dallas	46	6,440,000	53	2,968,000	12	4,800	21	63,000	40	18,000
Davis	34	1,802,000	49	1,568,000	14	700	12	15,600	45	1,800
Decatur	34	2,346,000	49	1,127,000	17	850	14	33,600	40	800
Delaware	31	2,821,000	47	2,561,500	24	8,400	18	1,800	37	259,000
Des Moines	47	3,243,000	43	1,247,000	31	9,300	20	48,000	35	5,300
Dickinson	32	1,856,000	40	2,280,000	16	10,400	15	900	28	40,600
Dubuque	38	2,508,000	45	2,070,000	24	24,000	24	12,000	41	127,100
Emmet	35	2,205,000	41	2,214,000	25	25,000	----	----------	31	24,800
Fayette	29	2,610,000	46	3,220,000	21	21,000	22	4,400	37	170,000
Floyd	32	2,816,000	39	2,847,000	22	15,400	24	3,100	37	59,200
Franklin	41	4,715,000	48	3,960,000	20	6,600	23	1,150	30	63,000
Fremont	40	6,000,000	38	433,200	13	1,000	17	51,000	38	4,600
Greene	46	6,072,000	45	2,947,500	14	1,400	18	19,800	33	21,400
Grundy	41	4,387,000	44	3,270,000	24	4,100	20	2,000	37	107,300
Guthrie	41	4,592,000	41	1,948,000	16	17,600	14	28,000	28	30,800
Hamilton	45	5,850,000	50	4,550,000	21	4,200	19	2,900	31	9,300
Hancock	38	3,952,000	40	3,480,000	16	25,600	22	880	31	80,600
Hardin	45	5,355,000	49	3,430,000	24	10,000	22	2,900	35	45,500
Harrison	39	6,240,000	39	975,000	16	240,000	18	117,000	32	48,000
Henry	42	3,150,000	52	1,508,000	25	2,500	19	21,000	40	1,400
Howard	25	1,300,000	38	2,147,000	18	15,480	25	3,700	32	140,800
Humboldt	46	4,278,000	47	3,135,000	23	4,600	22	1,760	37	37,000
Ida	47	4,559,000	46	2,438,000	21	32,600	24	2,200	40	120,000
Iowa	45	4,320,000	55	2,282,500	24	16,800	25	2,000	40	54,000
Jackson	45	2,790,000	40	1,160,000	20	20,000	20	1,800	40	92,000
Jasper	40	6,320,000	48	2,880,000	20	40,000	17	11,000	25	10,000
Jefferson	35	2,380,000	38	988,000	22	6,600	15	15,000	52	2,600
Johnson	47	4,794,000	49	2,006,000	24	12,000	22	13,200	37	31,500
Jones	45	3,555,000	52	1,664,000	22	11,000	20	6,000	40	188,000
Keokuk	45	4,905,000	51	2,372,000	23	30,000	21	15,800	33	4,000
Kossuth	43	7,525,000	48	6,768,000	17	9,400	20	2,000	38	19,000
Lee	44	2,464,000	52	1,144,000	15	750	13	26,000	28	8,400
Linn	39	4,563,000	58	3,248,000	26	18,200	15	6,000	46	73,600
Louisa	41	2,747,000	48	756,000	18	900	17	51,000	34	5,100
Lucas	39	1,989,000	58	1,119,000	17	2,000	16	12,800	30	1,500
Lyon	38	4,978,000	53	5,300,000	22	33,000	18	1,800	38	216,600
Madison	34	3,502,000	46	1,472,000	20	18,000	17	46,000	34	53,000
Mahaska	47	5,405,000	51	2,499,000	21	14,700	15	21,000	40	11,200
Marion	43	4,300,000	53	1,643,000	25	37,500	16	80,000	40	12,000
Marshall	43	5,375,000	50	3,025,000	22	13,200	21	10,500	40	17,200
Mills	40	4,440,000	35	805,000	12	48,000	20	40,000	36	21,600
Mitchell	27	1,755,000	39	3,198,000	18	23,400	20	400	32	86,400

TABULATED CROP SUMMARY FOR THE YEAR 1917—Continued

Counties	Corn		Oats		Spring Wheat		Winter Wheat		Barley	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels
Monona	34	5,270,000	39	1,287,000	15	195,000	19	247,000	31	49,600
Monroe	42	1,932,000	60	840,000	19	6,100	20	16,000	42	2,520
Montgomery	40	4,240,000	45	1,013,000	18	50,400	14	42,000	36	14,400
Muscatine	43	3,268,000	53	1,272,000	24	13,400	20	17,000	35	182,000
O'Brien	43	4,816,000	45	3,870,000	18	5,400	20	2,800	32	224,000
Osceola	30	2,370,000	47	3,313,500	21	2,100	----	----------	30	90,000
Page	38	4,750,000	49	1,029,000	16	32,400	19	133,000	30	6,000
Palo Alto	38	3,382,000	42	2,688,000	25	3,800	18	900	32	25,600
Plymouth	40	8,080,000	44	4,224,000	17	544,000	22	26,400	39	198,900
Pocahontas	45	5,715,000	46	4,462,000	20	3,000	19	3,400	35	28,000
Polk	43	4,472,000	48	2,016,000	21	29,400	18	162,000	38	1,900
Pottawattamie	40	8,920,000	47	2,209,000	19	102,600	18	126,000	35	252,000
Poweshiek	46	5,428,000	54	2,484,000	22	17,600	20	7,000	40	56,000
Ringgold	35	2,870,000	44	1,144,000	16	1,600	15	28,500	23	2,300
Sac	40	4,800,000	44	3,168,000	18	900	12	480	32	118,400
Scott	50	4,200,000	54	1,404,000	29	24,000	26	31,200	36	774,000
Shelby	39	5,322,000	43	2,128,500	16	60,800	20	16,000	34	282,200
Sioux	45	7,155,000	49	5,292,000	20	260,000	19	13,300	34	476,000
Story	48	7,008,000	45	3,330,000	24	4,800	28	8,400	36	1,800
Tama	40	5,400,000	43	2,988,000	26	49,400	19	4,800	35	297,500
Taylor	33	3,399,000	42	1,134,000	17	2,200	17	27,200	40	12,000
Union	36	2,520,000	50	1,100,000	17	4,200	15	12,000	40	5,600
Van Buren	38	2,052,000	50	1,050,000	18	540	17	20,400	----	----------
Wapello	36	2,340,000	45	990,000	12	1,200	16	32,000	41	2,870
Warren	41	3,936,000	50	1,125,000	19	10,800	23	172,500	40	18,400
Washington	32	3,104,000	45	1,890,000	16	4,800	15	22,500	30	9,000
Wayne	36	2,592,000	49	1,274,000	10	2,000	11	11,000	30	1,500
Webster	38	5,548,000	43	4,730,000	17	17,000	15	4,500	38	26,600
Winnebago	35	2,170,000	45	2,385,000	17	51,000	----	----------	34	151,300
Winneshiek	26	2,184,000	42	2,919,000	19	98,800	24	7,200	30	360,000
Woodbury	38	7,828,000	43	3,010,000	21	163,800	22	46,200	38	81,700
Worth	37	1,776,000	37	2,220,000	22	44,000	21	4,200	40	148,000
Wright	38	4,598,000	43	3,612,000	18	7,200	16	800	36	50,400
Totals	40	409,667,000	46	239,416,200	18	3,199,820	18	2,397,560	35	9,112,590

TABULATED CROP SUMMARY FOR THE YEAR 1917—Continued

Coucties	Rye		Flax Seed		Potatoes		Hay--Tame		Hay—Wild		Alfalfa	
	Bushels per acre	Total Bnshels	Bushels per acre	Total Bush'ls	Bushels per acre	Total Bushels	Tons per acre	Total Tons	Tons per acre	Total Tons	Tons per acre	Total Tons
Adair	15	300	----	--------	100	115,000	0.9	26,100	1.5	3,300	3.5	350
Adams	24	2,700	----	--------	56	28,000	0.7	17,500	1.0	1,400	4.0	2,400
Allamakee	19	8,600	10	750	105	526,000	1.8	77,400	1.8	2,200	3.5	50
Appanoose	15	2,250	----	--------	71	49,700	1.1	39,600	1.0	590	3.0	120
Audubon	20	600	----	--------	79	51,400	1.0	26,000	1.5	3,000	4.0	4,400
Benton	19	8,600	----	--------	80	88,000	1.4	56,000	1.0	2,000	1.5	150
Black Hawk	24	27,600	----	--------	112	179,200	1.4	40,600	1.1	8,200	2.0	200
Boone	17	340	----	--------	68	115,600	1.2	22,800	1.1	7,900	2.1	600
Bremer	18	9,500	----	--------	101	171,700	2.0	34,000	1.4	25,700	3.0	180
Buchanan	18	12,600	----	--------	115	109,200	1.4	51,800	1.4	15,800	3.2	50
Buena Vista	20	1,000	11	660	94	112,800	1.3	28,600	1.3	13,500	3.3	2,400
Butler	21	18,900	----	--------	105	147,000	2.0	42,000	1.1	11,500	3.0	60
Calhoun	20	400	10	400	73	39,400	1.3	23,400	0.9	4,200	3.5	900
Carroll	19	570	----	--------	122	207,400	1.2	31,200	1.1	9,200	5.0	2,500
Case	17	1,870	----	--------	70	94,500	1.0	33,000	1.2	1,300	2.2	1,800
Cedar	19	7,600	----	--------	72	67,700	1.3	53,300	1.2	180	2.0	320
Cerro Gordo	14	980	10	3,000	180	184,000	1.6	44,800	1.2	16,000	4.0	360
Cherokee	20	600	----	--------	110	137,500	1.0	23,500	1.1	8,800	3.5	8,750
Chickasaw	23	5,800	12	960	95	66,500	2.0	48,000	1.5	21,800	----	--------
Clarke	18	720	----	--------	80	20,000	1.1	25,300	1.5	90	2.0	100
Clay	12	1,200	9	1,620	144	92,200	1.1	24,400	1.0	12,900	3.5	2,450
Clayton	19	11,400	----	--------	122	231,800	1.7	97,000	1.3	1,300	3.0	240
Clinton	18	18,900	----	--------	99	119,000	1.1	50,500	1.0	1,700	3.0	600
Crawford	22	1,100	----	--------	158	252,800	1.2	48,000	1.4	7,300	3.5	15,400
Dallas	23	1,600	----	--------	72	36,000	1.0	18,500	1.1	3,100	4.5	2,700
Davis	25	12,500	----	--------	60	30,000	1.1	48,400	1.0	12	3.0	90
Decatur	14	2,800	----	--------	65	13,000	1.7	61,200	0.8	76	2.7	500
Delaware	16	32,000	----	--------	74	74,000	1.4	54,600	1.3	7,400	4.5	270
Des Moines	20	24,000	----	--------	120	108,000	1.1	21,000	1.0	70	3.4	1,700
Dickinson	19	570	10	4,200	86	30,100	1.4	18,200	1.1	12,800	4.0	4,000
Dubuque	23	6,900	----	--------	126	239,400	1.4	78,400	0.9	660	3.8	420
Emmet	28	2,240	10	2,150	70	28,000	1.2	19,800	1.0	7,300	3.5	260
Fayette	24	10,400	----	--------	154	200,000	1.6	81,600	1.1	11,200	4.0	80
Floyd	20	8,400	11	1,760	125	162,500	1.9	51,300	1.2	5,100	2.6	130
Franklin	21	2,100	11	1,100	162	226,800	1.7	47,600	1.4	12,600	2.8	140
Fremont	16	4,800	----	--------	62	55,800	1.0	7,000	1.7	4,600	3.0	18,600
Greene	----	--------	----	--------	96	48,000	1.0	22,000	1.1	6,600	2.0	600
Grundy	28	300	----	--------	120	252,000	1.1	22,000	1.0	5,000	3.0	100
Guthrie	23	460	----	--------	73	39,700	1.3	35,100	1.0	8,600	3.0	1,050
Hamilton	30	1,200	----	--------	70	52,500	1.3	30,000	1.1	6,600	3.2	5,600
Hancock	20	2,000	11	1,650	120	90,000	1.2	28,200	1.0	18,500	3.5	350
Hardin	26	1,300	----	--------	98	83,300	1.3	31,000	1.0	5,600	3.0	300
Harrison	25	2,000	----	--------	87	78,300	2.5	26,000	2.5	17,500	4.0	34,000
Henry	18	9,500	----	--------	117	49,100	1.3	28,600	----	--------	2.6	450
Howard	18	2,500	10	5,000	91	81,900	1.7	48,300	1.0	13,100	4.0	80
Humboldt	25	4,300	10	600	107	42,800	1.4	22,400	1.0	6,400	2.6	390
Ida	25	500	----	--------	100	80,000	1.3	27,300	1.2	2,300	3.8	4,600
Iowa	26	5,700	----	--------	86	103,200	1.2	28,800	1.0	450	4.0	560
Jackson	30	21,600	----	--------	150	187,500	2.0	90,000	1.5	1,600	4.0	520
Jasper	20	3,000	----	--------	70	56,000	0.9	30,600	1.2	600	1.8	300
Jefferson	13	2,500	----	--------	114	79,800	1.1	25,300	----	--------	3.0	75
Johnson	20	14,000	----	--------	89	97,900	1.1	38,000	1.0	425	3.0	510
Jones	23	10,300	----	--------	110	83,500	1.3	52,000	0.8	184	4.0	820
Keokuk	24	4,800	----	--------	87	55,700	1.2	40,800	1.0	50	4.5	840
Kossuth	30	3,000	10	7,000	135	202,500	1.5	49,500	1.1	37,400	3.0	825
Lee	24	151,000	----	--------	111	133,000	1.5	48,000	----	--------	3.5	10,400
Linn	27	21,600	----	--------	88	149,600	1.1	40,700	0.8	1,800	2.7	460
Louisa	15	18,000	----	--------	85	34,000	1.2	17,000	1.1	220	3.0	420
Lucas	15	300	----	--------	94	20,700	1.4	34,300	0.5	50	3.0	150
Lyon	20	1,000	----	--------	124	223,200	1.5	19,500	1.5	14,700	3.3	6,600
Madison	20	1,000	----	--------	48	28,800	1.1	30,000	1.0	1,000	2.5	500
Mahaska	21	3,600	----	--------	90	58,500	1.1	38,500	1.2	450	2.3	460
Marion	26	1,800	----	--------	100	50,000	1.1	28,600	1.1	350	2.6	1,040
Marshall	24	480	----	--------	86	86,000	1.0	31,000	0.8	240	2.5	250
Mills	17	3,400	----	--------	85	93,500	1.0	10,000	1.0	4,100	3.0	21,000
Mitchell	20	600	13	12,500	170	425,000	1.8	47,200	1.2	3,800	----	--------

TABULATED CROP SUMMARY FOR THE YEAR 1917—Continued

Counties	Rye		Flax Seed		Potatoes		Hay—Tame		Hay—Wild		Alfalfa	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Tons	Bushels per acre	Total Tons	Bushels per acre	Total Tons
Monona	25	1,250	----	--------	118	283,200	2.0	17,800	1.7	23,000	3.4	37,400
Monroe	20	2,000	----	--------	100	36,000	1.4	42,000	1.0	10	3.0	150
Montgomery	16	2,600	----	--------	84	50,400	0.9	14,400	1.2	800	2.5	7,500
Muscatine	16	44,800	----	--------	108	156,600	1.1	17,600	0.9	420	3.0	750
O'Brien	22	1,100	16	2,000	84	84,000	1.4	32,200	1.0	7,300	2.4	2,900
Osceola	23	690	14	2,240	110	99,000	1.5	21,000	1.1	7,700	2.5	450
Page	17	7,650	----	--------	59	32,500	1.1	46,200	1.0	1,100	3.7	9,250
Palo Alto	28	5,300	10	5,000	143	71,500	1.5	22,500	1.1	22,000	2.6	550
Plymouth	21	10,500	----	--------	111	255,300	1.6	32,000	1.4	22,000	3.1	1,100
Pocahontas	30	4,500	12	1,200	90	58,500	1.3	22,100	1.1	12,100	3.0	600
Polk	22	2,200	----	--------	88	96,800	1.2	15,600	1.2	3,000	2.4	1,450
Pottawattamie	27	8,100	----	--------	96	259,200	1.4	42,000	1.4	11,760	3.2	44,800
Poweshiek	23	690	----	--------	91	72,800	1.4	36,400	1.2	120	3.0	720
Ringgold	15	4,000	----	--------	62	16,700	1.0	32,000	1.1	150	3.0	210
Sac	28	560	12	480	123	86,100	1.3	29,900	1.2	5,500	2.8	925
Scott	21	36,700	----	--------	117	409,500	1.3	26,000	1.2	2,000	2.8	2,000
Shelby	27	4,000	----	--------	88	96,800	0.9	27,000	1.0	4,000	2.0	5,600
Sioux	20	1,000	----	--------	108	140,400	1.6	27,200	1.2	18,000	3.7	18,500
Story	30	1,200	----	--------	92	23,000	1.3	33,800	0.9	1,800	2.0	540
Tama	22	660	----	--------	86	103,200	1.4	47,600	1.1	1,300	4.0	560
Taylor	15	3,750	----	--------	95	52,200	1.3	40,300	1.2	700	1.8	1,400
Union	15	450	----	--------	61	38,400	1.0	23,000	1.2	540	4.0	320
Van Buren	18	9,000	----	--------	61	13,400	1.2	39,600	----	--------	3.5	800
Wapello	8	1,600	----	--------	47	35,200	1.4	36,400	----	--------	2.0	300
Warren	20	3,800	----	--------	102	51,000	1.2	34,800	1.0	500	2.5	375
Washington	15	1,500	----	--------	90	58,500	1.0	35,000	----	--------	3.0	360
Wayne	15	1,050	----	--------	107	16,000	1.2	37,200	1.0	50	2.8	200
Webster	20	200	12	1,200	59	41,300	1.7	39,100	1.4	17,500	3.0	1,050
Winnebago	22	2,200	10	4,500	133	115,700	1.6	25,600	1.2	26,400	3.5	175
Winneshiek	23	8,000	8	2,400	101	121,200	2.0	94,000	1.4	6,600	3.0	75
Woodbury	22	3,500	----	--------	108	194,400	1.2	21,000	1.7	16,200	3.6	46,800
Worth	27	3,200	11	17,600	100	76,000	2.0	41,000	1.2	18,600	3.0	100
Wright	19	760	14	840	104	72,800	1.5	39,000	1.2	8,400	5.0	400
Totals	20	722,690	11	80,810	109	10,793,600	1.3	3,584,400	1.2	636,947	3.4	353,830

Food Conservation exhibit at the 1917 Iowa State Fair.

PART X

Farm Statistics for the Year Ending December 31, 1917. Collected by Township Assessors, Reported by County Auditors and Tabulated by the Iowa Department of Agriculture.

Under this head a series of statistical tables is presented setting forth the production of various farm crops by counties for the year 1917; also the number of farm animals and other information hardly procurable from any other source.

This information is first collected by the township assessors and reported to the Department of Agriculture by the county auditors as provided by state law and the tabulations made by the department.

In Table No. 1 the reader will note two new items or features, one giving the number of farm tractors owned in the state and their distribution by counties, the other giving the number of tons of silage put up in 1917.

While infinite care and pains have been taken in collecting the figures and making the tabulations the department considers them from 8 to 10 per cent conservative, that is, they are below actual production to that extent.

TABLE NO. 1.

Total number, average size and total acreage of farms, total acreage occupied by farm buildings, public highways and feed lots, acreage in pasture, garden, orchard, crops not otherwise enumerated and land not utilized for any purpose. Number tractors and silos on farms, and number tons silage put up. Total number bushels apples harvested, monthly wage paid farm help, summer and winter months, by counties, for the year 1917.

Counties	Number of farms	Average size of farms	Total acreage of farms	Total number of acres occupied by farm buildings, public highways, and feed lots	Acreage in pasture	Acreage in garden	Acreage in orchard	Number bushels apples harvested	Acreage in crop not otherwise enumerated	Acreage in waste land not utilized for any purpose	Number of tractors on farms	Number of silos on farms	Number of tons of silage put up	Av. mo. wage paid farm help summer months	Av. mo. wage paid farm help winter months
Adair	2,038	167.1	340,641	15,110	125,546	374	1,264	16,368	201	645	14	108	11,444	$37.33	$29.41
Adams	1,539	163.1	251,058	9,970	96,824	315	828	15,826	139	713	9	159	16,036	40.00	35.00
Allamakee	2,015	176.7	356,138	9,574	163,253	300	784	19,503	150	36,958	11	281	23,253	35.76	26.17
Appanoose	1,762	171.3	301,812	8,981	119,106	377	982	11,423	1,490	2,985	19	54	3,148	34.61	36.13
Audubon	1,672	158.4	263,945	12,805	73,329	125	723	18,219	462	1,289	22	145	15,407	39.59	35.58
Benton	2,324	177.6	416,243	19,511	107,281	382	828	17,738	1,183	656	78	382	45,245	39.42	29.56
Black Hawk	2,126	155.1	328,745	14,507	90,232	472	904	20,286	2,002	2,649	43	673	71,390	38.88	31.05
Boone	2,396	140.9	337,658	22,028	75,358	188	898	20,306	673	912	72	162	13,744	40.00	25.00
Bremer	1,866	134.7	251,253	10,037	72,684	596	604	14,924	1,104	631	47	3,357	38,420	45.00	25.00
Buchanan	2,321	147.7	342,885	14,630	108,814	451	446	11,205	302	648	13	234	21,435	34.00	22.42
Buena Vista	1,915	182.8	349,999	18,475	67,981	216	322	14,382	1,043	1,474	101	247	23,048	42.40	33.76
Butler	1,955	170.	332,747	16,353	72,988	146	551	9,004	5,505	1,354	40	203	20,264	36.77	26.23
Calhoun	1,914	178.	340,685	15,311	50,482	129	411	11,405	1,101	1,108	79	60	6,037	39.88	35.28
Carroll	1,953	170.	333,626	16,469	119,952	388	744	12,854	270	1,400	69	82	8,622	34.55	27.60
Cass	2,042	169.8	346,630	14,183	109,492	309	1,375	24,474	331	1,659	71	154	18,921	40.32	35.60
Cedar	2,045	160.6	328,424	13,162	103,470	594	871	24,941	223	1,150	27	232	25,946	37.74	30.37
Cerro Gordo	1,907	173.1	330,172	15,941	75,080	432	354	9,370	2,386	2,903	47	283	28,848	43.06	36.32
Cherokee	1,784	196.7	350,904	15,470	80,397	182	530	13,258	611	624	99	173	19,839	44.89	29.08
Chickasaw	1,858	153.3	284,864	12,593	82,513	92	224	3,058	281	995	15	247	24,206	35.77	24.19
Clarke	1,354	174.2	235,911	91.02	99,420	399	705	6,650	265	2,306	7	104	8,512	33.40	33.18
Clay	1,627	201.7	328,280	17,818	74,755	114	369	11,645	537	3,664	134	149	15,315	40.31	31.81
Clayton	2,740	157.	430,264	14,238	158,652	519	1,293	32,215	330	13,538	49	370	29,959	34.56	28.61
Clinton	2,505	157.6	394,695	15,621	141,300	178	384	7,838	419	2,287	53	200	19,778	30.11	26.53
Crawford	2,396	178.6	427,866	21,220	110,868	167	818	17,048	616	3.029	45	68	6,750	42.24	27.31
Dallas	2,189	158.1	344,046	13,701	88,471	329	1,576	26,009	8,422	2,324	52	185	19,000	40.51	34.66

Davis	2,103	138.9	292,066	8,916	141,869	623	1,310	21,776	1,129	2,710	11	51	3,299	34.12	34.27
Decatur	1,845	150.8	278,158	8,909	112,244	396	967	9,094	1,408	2,398	6	66	4,554	35.46	34.64
Delaware	2,097	161.5	338,644	13,261	112,889	422	492	13,717	1,525	3,386	46	561	54,413	34.95	29.74
Des Moines	1,710	126.7	216,702	7,468	80,523	548	1,621	51,177	349	2,418	28	124	10,221	31.94	31.74
Dickinson	1,041	211.1	219,750	10,176	58,078	118	230	3,804	540	3,623	36	56	5,034	38.97	28.10
Dubuque	2,196	157.4	346,581	9,320	145,080	932	1,057	29,293	231	4,198	15	126	11,367	40.02	27.60
Emmet	1,106	203.4	225,009	10,793	51,116	34	211	4,772	1,954	4,509	33	177	13,975	37.33	28.20
Fayette	2,936	142.	416,857	19,962	137,423	390	584	17,143	8,317	3,477	24	563	51,434	37,69	31.12
Floyd	1,760	165.3	291,971	15,009	68,087	154	244	5,901	3,383	1,445	29	292	22,747	38.50	39.50
Franklin	2,003	177.	354,496	18,197	82,956	186	569	8,556	785	3,529	47	276	35,129	42.60	29.23
Fremont	1,580	153.8	243,004	9,493	59,782	102	1,361	98,602	510	4,088	29	102	18,688	38.31	39.00
Greene	1,888	176.5	332,311	14,923	77,248	218	675	13,549	898	1,884	48	73	7,752	36.94	35.61
Grundy	1,629	187.4	305,240	16,449	70,686	120	271	4,513	38	143	38	196	23,304	39.13	28.35
Guthrie	2,171	153.7	333,733	13,327	8,717	231	1,813	30,338	549	2,512	16	52	6,431	36.75	32.99
Hamilton	2,089	165.5	345,682	15,873	69,238	176	282	8,357	3,939	2,186	101	171	14,864	43.56	36.70
Hancock	1,846	189.8	350,309	17,573	75,266	82	271	7,115	2,522	5,217	40	257	25,313	42.24	33.66
Hardin	1,892	169.4	320,561	15,506	72,238	511	580	11,923	178	487	46	167	12,689	39.80	36.26
Harrison	2,521	145.2	366,165	14,076	94,234	331	1,375	65,667	2,086	6,585	37	83	11,040	40.84	39.58
Henry	1,697	145.5	246,850	8,547	96,719	262	1,022	13,033	1.619	2,472	10	97	7,262	35.42	33.28
Howard	1,578	168.1	265,260	10,663	78,668	142	172	3,344	241	976	7	308	29,593	34.57	24.85
Humboldt	1,352	187.9	254,286	13,412	43,223	105	318	5,652	1,017	3,658	112	221	25,536	42.50	31.82
Ida	1,412	192.	271.169	12,919	122,808	156	478	12,084	122	235	58	61	6,620	39.73	23.52
Iowa	2,054	161.3	331,309	12,198	97,563	428	1,072	29,558	477	8,646	44	310	35,494	40.00	31.39
Jackson	2,071	167.3	346,404	8,245	228,513	637	1,112	26,301	467	1,929	8	171	18,378	39.36	35.90
Jasper	2,862	150.6	431,197	18,540	120,347	495	1,304	18,473	996	2,152	47	318	33,436	39.24	36.33
Jefferson	1,705	146.4	249,680	8,603	98,160	308	1,151	16,085	170	379	19	134	10,448	34.33	30.17
Johnson	2,415	143.5	346,559	11,564	115,053	445	1,429	39,131	644	3,829	108	211	30,730	38.00	35.00
Jones	1,995	179.3	317,826	9,264	129,238	433	566	14.416	238	1,577	24	255	30,798	37.11	29.00
Keokuk	2,551	132.8	338,691	12,994	123,194	371	1,556	20,165	849	5,911	20	229	19,227	34.57	32.40
Kossuth	2,799	203.3	568,897	30,022	115,807	324	693	19,267	1,354	12,072	139	419	43,648	40.53	33.63
Lee	1,984	142.6	282,943	7,865	133,547	900	1,689	51,839	1,406	5,033	31	214	14,740	34.48	31.20
Linn	2,974	129.	383,731	14,311	116,989	1,359	1,159	43,081	550	3,432	35	507	47,188	35.73	28.37
Louisa	1,367	154.1	210,731	5,333	71,332	579	1,174	12,906	1,709	2.374	40	130	12,966	35.61	36.34
Lucas	1,587	159.6	253,307	7,694	104,019	195	982	16,339	910	838	10	113	10,151	38.50	35.71
Lyon	1,696	207.7	352,342	18,734	62,330	93	190	2.597	174	456	62	80	9,170	44.15	27.65
Madison	2,117	153.5	324,922	13,485	133,350	570	1,749	28,949	291	3,518	34	181	19,597	43.38	34.63
Mahaska	2,589	132.6	343,390	11,016	118,418	562	2,405	38,447	2,461	6,056	29	201	19,253	39.68	37.61
Marion	2,224	144.9	322,190	10,671	133,353	564	328	16,796	2,020	5,359	15	211	24,157	40.40	35.54
Marshall	2,337	138.5	323,669	17,305	87,599	314	625	15,089	355	1,446	62	291	31,214	45.44	31.65
Mills	1,453	164.3	238,774	9,952	64,403	166	1,453	57,609	2,551	4,616	52	55	5,300	37.99	35.01
Mitchell	1,696	161.9	274,713	13,472	65,357	151	272	8,628	1,196	1,319	63	321	39,877	40.17	28.53
Monona	2,121	180.2	382,132	14,850	92,031	182	709	19,534	1,430	13,101	60	88	14,401	35.00	20.00
Monroe	1,582	137.6	217,794	6,719	119,455	320	833	16,455	728	849	2	106	7,964	38.86	33.83
Montgomery	1,668	153.6	256,232	10,367	81,182	182	959	15,276	203	1,178	24	75	6,800	41.60	36.15
Muscatine	1,608	144.6	232,476	8,535	70,377	229	755	18,823	5,500	1,888	43	251	29,519	38.00	34.20
O'Brien	1,808	188.	339,924	18,799	72,946	112	293	5,861	486	249	70	77	8,614	40.96	26.20

TABLE No. 1—CONTINUED.

Counties	Number of farms	Average size of farms	Total acreage of farms	Total number of acres occupied by farm buildings, public highways, and feed lots	Acreage in pasture	Acreage in garden	Acreage in orchard	Number bushels apples harvested	Acreage in crop not otherwise enumerated	Acreage in waste land not utilized for any purpose	Number of tractors on farms	Number of silos on farms	Number of tons of silage put up	Av. mo. wage paid farm help summer months	Av. mo. wage paid farm help winter months
Osceola	1,190	202.7	241,277	12,781	39,321	290	470	10,057	2,490	1,083	51	79	8,914	41.68	26.78
Page	2,045	163.3	333,890	12,138	106,807	84	68	482	1,074	1,328	25	49	4,280	37.11	34.48
Palo Alto	1,690	175.5	296,552	13,750	61,409	177	869	19,904	470	2,868	55	104	9,229	44.50	32.10
Plymouth	2,676	190.4	519,517	26,360	106,720	114	398	6,077	3,533	3,899	103	152	15,247	41.90	32.25
Pocahontas	2,018	174.6	352,431	18,078	57,483	105	386	9,131	495	2,330	115	110	11,212	42.50	16.71
Polk	2,445	121.5	297,006	12,999	75,368	1,292	2,205	50,946	1,729	4,568	58	203	15,996	37.90	37.88
Pottawattamie	2,951	174.6	515,283	22,846	134,002	698	2,087	57,370	3,035	22,887	57	107	12,384	41.49	34.69
Poweshiek	2,070	163.	337,368	11,198	97,760	276	1,099	13,513	248	463	57	301	32,925	37.86	35.45
Ringgold	1,908	160.3	305,853	10,950	119,712	295	1,212	11,914	120	1,107	4	147	11,446	32.00	34.00
Sac	1,802	185.3	333,862	18,642	59,727	140	452	7,138	255	754	85	102	12,776	41.01	29.19
Scott	2,213	121.9	269,822	10,116	80,297	8,470	1,571	27,054	1,334	2,362	43	303	29,356	39.42	26.81
Shelby	2,041	169.9	346,790	13,848	96,908	372	1,190	20,356	473	1,877	20	67	7,850	39.25	23.06
Sioux	2,541	175.9	446,932	22,546	79,760	82	91	2,855	224	64	51	167	17,432	45.73	23.66
Story	2,202	151.8	334,326	15,906	66,084	38	334	7,701	718	1,241	55	274	22,309	41.59	39.94
Tama	2,558	168.9	432,006	19,770	128,311	398	888	17,166	92	2,057	49	267	34,567	40.00	33.33
Taylor	2,246	139.4	313,137	13,769	122,235	574	1,800	15,974	194	2,637	7	201	18,409	33.60	34.55
Union	1,495	168.	251,194	10,060	106,454	199	1,042	15,220	176	2,130	5	113	12,026	34.52	32.26
Van Buren	1,776	152.3	270,571	7,904	118,525	72	1,244	24,576	921	835	5	180	13,880	35.66	38.00
Wapello	1,960	121.4	237,857	7,460	101,071	626	1,527	27,019	1,699	3,930	13	113	10,467	32.07	29.93
Warren	2,299	147.2	338,353	12,806	130,456	536	1,836	41,536	419	1,601	16	193	19,979	35.56	33.15
Washington	2,041	154.5	315,367	12,565	111,420	307	1,288	23,719	174	1,696	39	147	13,832	36.22	35.77
Wayne	1,798	167.	300,436	10,451	105,169	323	945	6,145	845	525	16	57	4,130	29.89	33.28
Webster	2,430	176.9	429,823	25,529	82,529	145	525	21,099	608	5,352	127	125	10,789	39.79	31.95
Winnebago	1,555	158.6	246,759	13,648	53,465	247	574	7,060	388	8,638	28	196	15,639	40.04	23.59
Winneshiek	2,718	150.9	414,681	15,913	141,163	306	765	17,182	503	8,016	32	343	30,093	37.83	25.38
Wright	2,758	174.3	480,989	20,723	104,187	456	1,034	33,447	5,861	4,726	60	233	25,831	45.41	37.22
Woodbury	1,404	182.2	255,821	13,047	61,216	1,021	340	12,254	1,622	2,656	46	159	16,279	38.37	25.58
Worth	1,761	191.	336,278	16,871	67,850	616	190	6,237	992	3,508	67	140	14,079	38.87	30.88
Total	198,585	162.1	32,188,310	1,374,794	9,496,312	42,091	85,559	1,898,246	122,244	313,682	4,363	19,072	1,913,158	38.95	31.55

TABLE NO. 2.

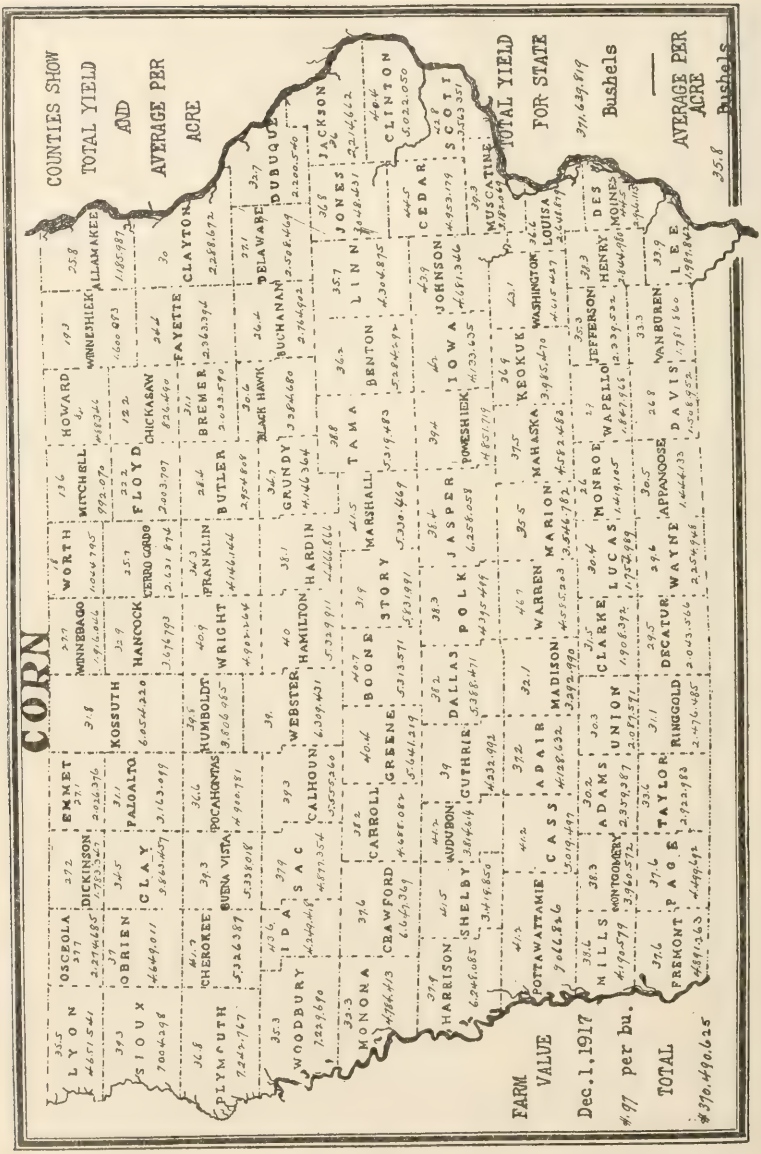
Acreage, yield and total yield of corn, oats, winter wheat, spring wheat and barley, by counties for the year 1917.

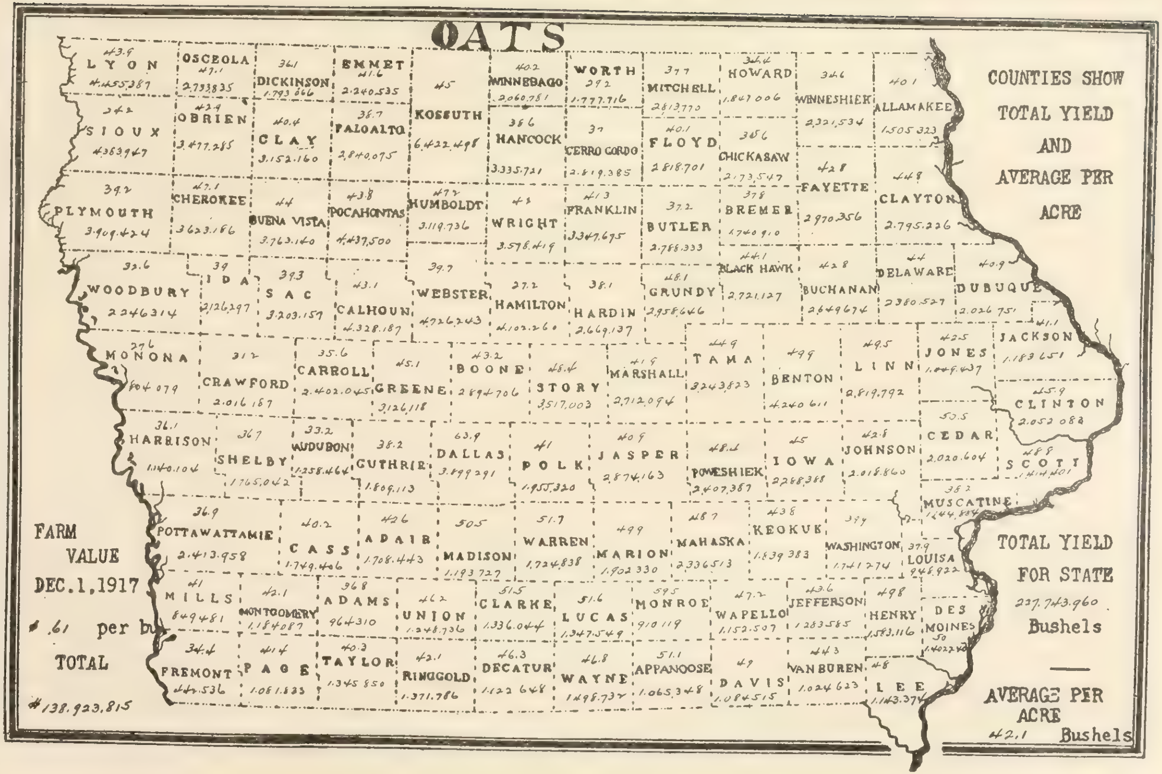
Counties	Corn			Oats			Winter Wheat			Spring Wheat			Barley		
	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels
Adair	111,099	37.2	4,128,632	40,118	42.6	1,708,443	867	14.3	12,413	1,111	22.	24,529	3,989	34.	135,722
Adams	78,157	30.2	2,359,387	26,156	36.8	964,310	2,549	13.4	34,274	248	19.4	4,811	1,109	33.1	36,785
Allamakee	46,018	25.8	1,185,987	37,499	40.1	1,505,323	657	22.5	14,760	1,880	20.3	38,154	6,368	29.5	187,662
Appanoose	47,252	30.5	1,444,133	20,815	51.1	1,065,348	788	9.	7,155	194	18.8	3,667	49	13.6	666
Audubon	92,520	41.2	3,814,614	37,836	33.2	1,258,464	397	16.	6,345	1,890	15.5	29,411	8,376	32.9	275,558
Benton	145,834	36.2	5,284,292	84,956	49.9	4,240,611	45	25.1	1,130	579	26.6	15,402	7,555	45.	339,644
Black Hawk	110,680	30.6	3,384,680	61,635	44.1	2,721,127	112	17.4	1,943	293	24.7	7,242	3,682	32.8	120,967
Boone	130,547	40.7	5,313,571	69,029	43.2	2,894,706	559	17.	9,415	504	28.2	14,252	885	32.6	28,868
Bremer	65,257	31.1	2,033,590	45,995	37.8	1,740,910	127	19.3	2,449	377	22.	8,289	1,057	31.9	33,753
Buchanan	104,929	26.4	2,764,902	61,975	42.8	2,649,674	100	13.4	1,396	489	28.	13,536	2,579	38.	98,039
Buena Vista	135,675	39.3	5,338,018	85,451	44.	3,763,140	91	12.2	1,113	142	20.9	2,967	693	34.1	23,613
Butler	103,793	28.4	2,954,808	74,978	37.2	2,788,333	19	15.4	293	447	23.5	10,492	1,100	34.	37,489
Calhoun	141,296	39.3	5,555,260	100,428	43.1	4,328,187	211	9.1	1,921	94	21.8	2,035	609	29.	17,647
Carroll	122,763	38.2	4,688,082	67,538	35.6	2,402,045	424	12.6	5,360	3,009	19.4	58,303	2,174	32.4	70,366
Cass	121,924	41.2	5,019,497	43,569	40.2	1,749,406	2,682	15.3	40,978	2,219	19.2	42,528	7,890	33.7	266,261
Cedar	111,195	44.5	4,953,179	40,002	50.5	2,020,604	127	15.	1,907	584	28.1	16,393	12,899	37.2	480,425
Cerro Gordo	102,254	25.7	2,631,874	76,183	37.	2,819,385	35	31.2	1,091	549	19.1	10,512	1,977	30.5	60,345
Cherokee	127,449	41.7	5,326,387	76,852	47.1	3,623,186	27	21.7	585	199	23.4	4,814	1,997	36.1	72,132
Chickasaw	67,915	12.2	826,490	60,987	35.6	2,173,547	41	17.	694	2,312	17.7	40,937	2,283	27.6	62,966
Clarke	60,545	31.5	1,908,392	25,747	51.5	1,336,044	1,669	12.7	21,312	69	21.3	1,469	160	32.2	5,151
Clay	112,013	34.5	3,863,457	78,019	40.4	3,152,160	34	21.5	733	226	16.9	3,826	2,554	28.6	73,148
Clayton	76,241	30.	2,288,672	62,412	44.8	2,795,226	1,332	19.5	25,982	2,222	24.5	54,500	10,112	35.5	359,205
Clinton	121,704	40.4	5,022,050	44,726	45.9	2,052,083	1,103	15.3	16,847	1,723	23.9	41,282	9,434	36.1	340,718
Crawford	150,149	37.6	6,647,369	64,696	31.2	2,016,187	704	15.5	10,922	8,330	18.6	155,048	4,459	30.	133,680
Dallas	141,112	38.2	5,388,471	60,985	63.9	3,899,291	2,728	18.8	51,364	458	18.1	8,595	982	34.2	33,595
Davis	56,284	26.8	1,508,952	22,090	49.	1,084,515	750	8.9	6,673	192	18.1	3,477	51	19.1	976
Decatur	69,193	29.5	2,043,566	24,228	46.3	1,122,648	1,260	6.6	8,266	59	15.4	908	44	12.3	541
Delaware	92,664	27.1	2,508,469	54,151	44.	2,380,527	87	14.6	1,267	559	23.3	13,020	8,648	36.2	303,477

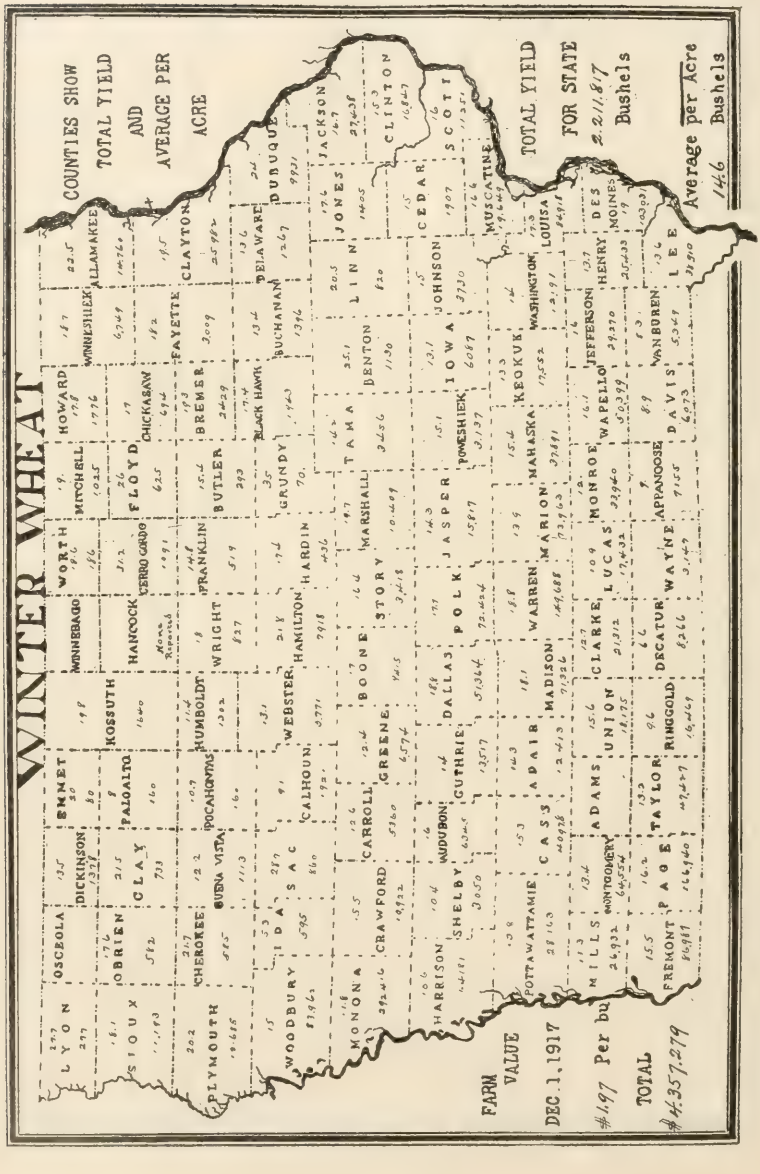
TABLE No. 2—CONTINUED

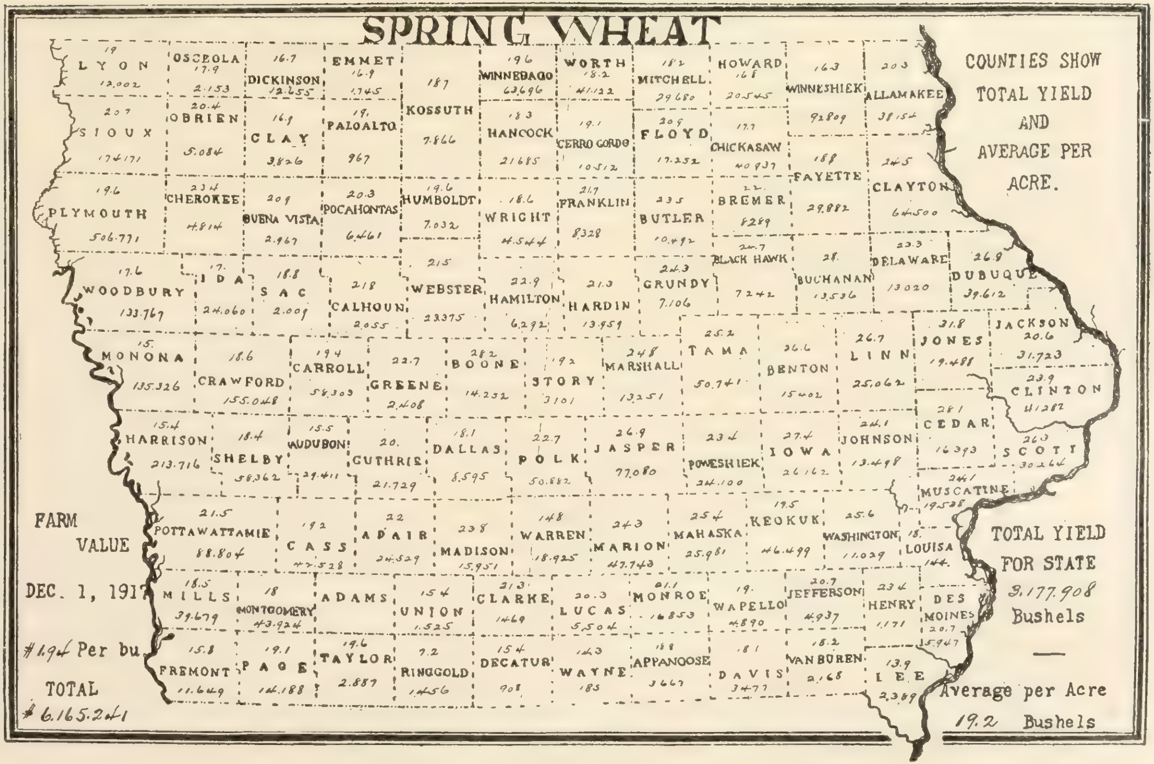
Counties	Corn			Oats			Winter Wheat			Spring Wheat			Barley		
	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels
Des Moines	65,710	44.5	2,926,115	28,064	50.	1,402,240	5,426	19.	103,031	288	20.7	5,947	222	34.9	7,746
Dickinson	65,558	27.2	1,783,347	49,670	36.1	1,793,066	102	13.5	1,378	755	16.7	12,655	1,375	23.7	32,611
Dubuque	67,278	32.7	2,200,540	49,513	40.9	2,026,751	413	24.	9,931	1,480	26.8	39,612	4,191	35.9	150,520
Emmet	74,704	27.1	2,026,376	53,793	41.6	2,240,535	4	20.	80	103	16.9	1,745	1,144	28.5	32,688
Fayette	96,665	24.4	2,363,394	69,459	42.8	2,970,356	165	18.2	3,009	1,587	18.8	29,882	6,388	33.8	216,076
Floyd	90,248	22.2	2,003,707	70,242	40.1	2,818,701	24	26.	625	826	20.9	17,252	1,786	33.9	60,560
Franklin	120,814	34.3	4,146,144	81,019	41.3	3,347,675	35	14.8	519	383	21.7	8,328	2,429	33.3	81,003
Fremont	130,070	37.6	4,891,263	12,855	34.4	442,536	5,597	15.5	86,987	735	15.8	11,649	264	33.1	8,729
Greene	139,503	40.4	5,641,219	69,342	45.1	3,126,118	531	12.4	6,574	106	22.7	2,408	666	32.2	21,423
Grundy	110,721	37.4	4,146,364	72,490	48.1	2,958,646	2	35.	70	292	24.3	7,106	2,689	40.3	108,495
Guthrie	108,258	39.	4,232,992	47,327	38.2	1,809,113	963	14.	13,517	1,083	20.	21,729	1,485	30.3	45,020
Hamilton	133,382	40.	5,329,911	86,975	27.2	4,102,260	363	21.8	7,918	275	22.9	6,292	848	34.	28,803
Hancock	111,665	32.9	3,676,793	86,315	38.6	3,335,721	--------	------	----------	1,187	18.3	21,685	2,478	31.2	77,275
Hardin	117,215	38.1	4,466,866	70,110	38.1	2,669,137	25	17.4	436	654	21.3	13,959	1 716	36.9	63,282
Harrison	164,863	37.9	6,248,085	31,595	36.1	1,140,104	6,046	10.6	64,181	13,851	15.4	213,716	2,763	31.	85,548
Henry	74,168	38.3	2,844,980	31,812	49.8	1,583,116	1,859	13.7	25,433	50	23.4	1,171	104	34.1	3,548
Howard	61,880	8.	488,346	53,631	34.4	1,847,006	100	17.8	1,776	1,223	16.8	20,545	3,849	26.1	100,305
Humboldt	95,788	39.8	3,806,985	66,044	47.2	3,119,736	114	11.4	1,302	359	19.6	7,032	1,746	33.2	58,029
Ida	97,532	43.6	4,249,418	54,485	39.	2,126,297	39	15.3	595	1,417	17.	24,060	3,712	34.5	127,975
Iowa	98,447	42.	4,133,635	48,688	45.	2,188,388	463	13.1	6,087	956	27.4	26,162	1,738	41.2	71,547
Jackson	61,554	36.	2,214,662	28,824	41.1	1,183,651	1,645	16.7	27,438	1,542	20.6	31,723	2,564	35.	89,802
Jasper	163,123	38.4	6,258,058	70,185	40.9	2,874,163	1,107	14.3	15,817	2,869	26.9	77,080	789	33.	26,056
Jefferson	66,190	35.3	2,339,532	29,414	43.6	1,283,585	1,831	16.	29,270	239	20.7	4,937	140	29.3	4,102
Johnson	106,715	43.9	4,681,346	47,122	42.8	2,018,860	248	15.	3,730	561	24.1	13,498	1,783	31.6	61,635
Jones	82,645	36.8	3,048,431	34,127	42.5	1,449,437	180	17.6	1,405	613	31.8	19,488	5,651	39.6	223,974
Keokuk	107,898	36.9	3,985,470	42,455	43.8	1,839,383	1,325	13.2	17,552	2,659	17.5	46,499	283	32.3	9,142
Kossuth	190,122	31.8	6,054,220	142,630	45.	6,422,498	83	19.8	1,640	422	18.7	7,866	3,059	30.6	93,690
Lee	58,704	33.9	1,987,842	23,802	48.	1,143,374	2,852	13.6	38,910	172	13.9	2,389	518	29.7	15,392
Linn	120,601	35.7	4,304,875	56,952	49.5	2,819,792	41	20.5	840	940	26.7	25,062	2,670	34.6	92,553
Louisa	72,293	36.6	2,648,879	24,975	37.9	948,922	4,900	17.3	84,918	8	18.	144	111	27.8	3,087
Lucas	57,774	30.4	1,754,989	26,098	51.6	1,347,549	1,602	10.9	17,432	271	20.3	5,504	41	39.1	1,574

Lyon	130,927	35.5	4,651,541	101,540	43.9	4,455,387	10	27.7	277	631	19.	12,002	5,966	35.6	212,829
Madison	102,721	32.1	3,292,990	35,499	50.5	1,193,727	3,597	18.1	71,326	670	23.8	15,951	2,575	39.9	101,744
Mahaska	122,951	37.5	4,582,483	47,994	48.7	2,336,513	2,458	15.4	37,891	1,022	25.4	25,981	686	37.3	25,587
Marion	99,790	35.5	3,546,783	38,109	49.9	1,902,330	5,303	13.9	73,963	1,965	24.3	47,743	867	26.3	22,796
Marshall	128,439	41.5	5,330,469	64,699	41.9	2,712,094	527	19.7	10,409	534	24.8	13,251	411	35.8	14,717
Mills	108,705	38.6	4,190,579	20,690	41.	849,481	2,376	11.3	26,932	2,138	18.5	39,679	716	34.7	24,859
Mitchell	72,562	13.6	992,070	74,542	37.7	2,813,770	54	19.	1,025	1,626	18.2	29,680	2,987	28.1	83,838
Monona	147,935	32.3	4,784,413	29,121	27.6	804,079	24,792	11.8	292,416	9,009	15.	135,326	2,000	23.6	47,193
Monroe	50,694	26.	1,419,105	15,298	59.5	910,119	2,830	12.	33,940	798	21.1	16,853	59	30.2	1,781
Montgomery	103,256	38.3	3,960,572	28,136	42.1	1,184,087	4,794	13.4	64,554	2,440	18.	43,924	772	31.4	24,216
Muscatine	80,854	39.3	3,182,069	32,582	38.2	1,144,884	1,181	16.6	19,649	812	24.1	19,538	6,423	57.1	366,936
O'Brien	125,484	37.	4,649,011	81,086	42.9	3,477,285	33	17.6	580	246	20.4	5,084	6,815	34.3	233,761
Osceola	82,057	27.7	2,274,685	58,024	47.1	2,733,835	--------	------	----------	120	17.9	2,153	2,441	35.9	87,789
Page	119,761	37.6	4,499,692	26,132	41.4	1,081,833	10,263	16.2	166,940	744	19.1	14,188	310	29.6	9,169
Palo Alto	101,797	31.1	3,163,099	73,339	38.7	2,840,075	20	.8	160	51	19.	967	629	30.7	19,284
Plymouth	196,701	36.8	7,242,767	99,754	39.2	3,909,424	628	20.2	12,685	25,804	19.6	506,771	4,898	32.4	158,721
Pocahontas	133,777	36.6	4,900,781	101,366	43.8	4,437,500	15	10.7	160	318	20.3	6,461	536	32.8	17,557
Polk	114,825	38.3	4,395,499	47,661	41.	1,955,320	4,080	17.7	72,424	2,235	22.7	50,882	146	27.	3,939
Pottawattamie	219,886	41.2	9,066,826	65,494	36.9	2,413,958	2,043	13.8	28,163	4,124	21.5	88,804	11,065	36.3	401,150
Poweshiek	123,112	39.4	4,851,719	49,898	48.4	2,407,387	208	15.1	3,137	1,029	23.4	24,100	2,166	39.6	85,844
Ringgold	79,129	31.1	2,476,485	32,584	42.1	1,371,786	1,704	9.6	16,469	201	7.2	1,456	142	21.8	3,103
Sac	128,791	37.9	4,877,354	81,448	39.3	3,203,157	30	28.7	860	107	18.8	2,009	2,890	37.3	107,884
Scott	83,206	42.8	3,563,351	28,986	48.8	1,414,401	707	16.	11,351	1,148	26.3	30,264	28,530	36.9	1,053,723
Shelby	130,597	41.5	3,419,850	48,074	36.7	1,765,042	293	10.4	3,050	3,168	18.4	58,362	9,791	31.8	311,564
Sioux	178,321	39.3	7,004,298	99,186	44.2	4,383,947	620	18.1	11,193	8,425	20.7	174,171	14,792	35.	517,724
Story	151,516	31.9	5,831,991	72,611	48.4	3,517,003	208	16.4	3,418	161	19.2	3,101	38	44.5	1,690
Tama	137,089	38.8	5,319,483	72,159	44.9	3,243,823	244	14.2	3,456	2,014	25.2	50,741	8,501	36.3	308,774
Taylor	96,292	33.6	2,922,983	33,435	40.3	1,345,850	3,584	13.2	47,327	148	19.6	2,887	228	28.4	6,468
Union	68,949	30.3	2,087,591	27,048	46.2	1,248,736	1,168	15.6	18,175	99	15.4	1,525	391	31.6	12,336
Van Buren	53,506	33.3	1,781,860	23,143	44.3	1,024,623	648	8.3	5,349	119	18.2	2,168	46	33.	1,518
Wapello	63,814	29.	1,847,968	24,404	47.2	1,152,507	3,137	16.1	50,399	257	19.	4,890	201	32.1	6,454
Warren	98,019	46.7	4,585,203	33,321	51.7	1,724,838	7,943	18.8	149,688	1,280	14.8	18,925	587	39.5	23,266
Washington	107,006	43.1	4,615,427	43,656	39.9	1,741,274	874	14.	12,191	431	25.6	11,029	376	33.3	12,437
Wayne	83,872	29.6	2,254,948	31,944	46.8	1,498,732	391	8.	3,147	13	14.3	1,185	28	29.3	822
Webster	161,644	39.	6,309,431	118,911	39.7	4,726,243	439	13.1	5,771	1,088	21.5	23,375	1,015	22.3	22,662
Winnebago	69,016	27.7	1,916,046	51,184	40.2	2,060,781	--------	------	----------	3,240	19.6	63,696	3,815	28.2	107,541
Winneshiek	82,997	19.3	1,600,083	66,993	34.6	2,321,534	360	18.7	6,749	5,701	16.3	92,809	11,372	28.	318,714
Woodbury	204,563	35.3	7,229,690	74,991	32.6	2,446,314	5,574	15.	83,962	7,570	17.6	133,767	2,868	29.8	85,535
Worth	55,632	18.	1,044,795	60,807	29.2	1,777,716	10	18.6	186	2,252	18.2	41,122	3,066	24.5	75,232
Wright	119,984	40.9	4,902,264	85,113	42.	3,578,419	46	18.	827	243	18.6	4,544	1,367	32.4	44,344
Total	10,370,727	35.8	371,639,819	5,410,031	42.1	227,743,960	151,098	14.6	2,211,817	164,825	19.2	3,177,908	305,429	34.6	10,578,090


CORN
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE
371,639,819
Bushels
AVERAGE PER ACRE
35.8
Bushels
FARM VALUE
Dec. 1, 1917
$.97 per bu.
TOTAL
$370,490,625
LYON 35.5 4,651,541
OSCEOLA 37.7 2,274,685
DICKINSON 27.2 1,783,327
EMMET 27.1 2,026,376
KOSSUTH 31.8 6,054,220
WINNEBAGO 27.7 1,916,046
WORTH 18 1,044,795
MITCHELL 13.6 992,070
HOWARD 8 458,366
WINNESHIEK 19.3 1,600,053
ALLAMAKEE 25.8 1,185,987
SIOUX 39.3 7,004,298
OBRIEN 37 4,649,011
CLAY 34.5 3,863,457
PALOALTO 31.1 3,163,099
HANCOCK 32.9 3,676,793
CERRO GORDO 25.7 2,631,874
FLOYD 22.2 2,003,707
CHICKASAW 12.2 826,440
FAYETTE 24.4 2,363,394
CLAYTON 30 2,288,672
PLYMOUTH 36.8 7,242,767
CHEROKEE 41.7 5,326,387
BUENA VISTA 39.3 5,338,018
POCAHONTAS 36.6 4,900,781
HUMBOLDT 39.8 3,806,985
WRIGHT 40.9 4,902,264
FRANKLIN 34.3 4,146,144
BUTLER 28.4 2,954,808
BREMER 31.1 3,033,590
BUCHANAN 36.4 2,764,902
DELAWARE 27.1 2,508,469
DUBUQUE 32.7 2,200,540
WOODBURY 35.3 7,229,690
IDA 43.6 4,249,418
SAC 37.9 4,877,354
CALHOUN 39.3 5,555,260
WEBSTER 39 6,309,431
HAMILTON 40 5,329,911
HARDIN 38.1 4,466,866
GRUNDY 34.7 4,146,364
BLACK HAWK 30.6 3,384,680
JACKSON 36 2,214,662
MONONA 33.3 4,784,413
CRAWFORD 37.6 6,647,369
CARROLL 38.2 4,685,082
GREENE 40.4 5,641,219
BOONE 40.7 5,313,571
STORY 39 5,831,991
MARSHALL 41.5 5,330,469
TAMA 38.8 5,319,483
BENTON 36.2 5,284,292
LINN 35.7 4,304,875
JONES 36.8 3,048,431
CLINTON 40.4 5,022,050
HARRISON 37.9 6,248,085
SHELBY 41.5 3,419,850
AUDUBON 44.2 3,814,614
GUTHRIE 39 4,232,992
DALLAS 38.2 5,388,471
POLK 38.3 4,395,499
JASPER 38.4 6,258,058
POWESHIEK 39.4 4,851,719
IOWA 42 4,133,635
JOHNSON 43.9 4,681,346
CEDAR 44.5 4,953,179
SCOTT 42.8 3,563,351
MUSCATINE 39.3 3,182,069
POTTAWATTAMIE 41.2 9,066,826
CASS 41.2 5,019,497
ADAIR 37.2 4,128,632
MADISON 32.1 3,292,990
WARREN 46.7 4,555,303
MARION 35.5 3,546,782
MAHASKA 37.5 4,582,483
KEOKUK 36.9 3,985,470
WASHINGTON 43.1 4,615,437
LOUISA 36.6 2,648,879
MILLS 38.6 4,190,579
MONTGOMERY 38.3 3,960,572
ADAMS 30.2 2,359,387
UNION 30.3 2,087,591
CLARKE 31.5 1,908,392
LUCAS 30.4 1,757,989
MONROE 26 1,419,105
WAPELLO 27 1,847,965
JEFFERSON 35.3 2,339,532
HENRY 38.3 2,844,980
DES MOINES 44.5 2,946,115
FREMONT 37.6 4,891,363
PAGE 37.6 4,499,692
TAYLOR 33.6 2,922,983
RINGGOLD 31.1 2,476,485
DECATUR 29.5 2,043,566
WAYNE 29.6 2,254,948
APPANOOSE 30.5 1,444,133
DAVIS 26.8 1,508,952
VAN BUREN 33.3 1,781,560
LEE 33.9 1,989,842


OATS
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 227.743.960 Bushels
AVERAGE PER ACRE 42.1 Bushels
FARM VALUE DEC. 1, 1917
.61 per bu
TOTAL #138.923.815
LYON 43.9 4.455.387
OSCEOLA 47.1 2.733835
DICKINSON 36.1 1.793 666
EMMET 41.6 2.240.535
KOSSUTH 45 6.422.498
WINNEBAGO 40.2 2,060.781
WORTH 29.2 1.777.716
MITCHELL 37.7 2813770
HOWARD 34.4 1.847 006
WINNESHIEK 34.6 2,321,534
ALLAMAKEE 40.1 1.505 323
SIOUX 24.2 4363947
OBRIEN 42.9 3.477.285
CLAY 40.4 3.152.160
PALOALTO 38.7 2,840.075
HANCOCK 38.6 3.335.721
CERRO GORDO 37 2.819.385
FLOYD 40.1 2818.701
CHICKASAW 35.6 2.173.547
FAYETTE 42.8 2970.356
CLAYTON 44.8 2.795.226
PLYMOUTH 39.2 3.909.424
CHEROKEE 47.1 3623.166
BUENA VISTA 44 3.763.140
POCAHONTAS 43.8 4.437,500
HUMBOLDT 47.2 3.119.736
WRIGHT 43 3.578.419
FRANKLIN 41.3 3347.695
BUTLER 37.2 2.788.333
BREMER 37.8 1740 910
BLACK HAWK 44.1 2.721.127
BUCHANAN 42.8 2649674
DELAWARE 44 2380.527
DUBUQUE 40.9 2.026 751
WOODBURY 32.6 2246314
IDA 39 2,126,297
SAC 39.3 3.203.157
CALHOUN 43.1 4.328.187
WEBSTER 39.7 4726,243
HAMILTON 27.2 4.102.260
HARDIN 38.1 2.669.137
GRUNDY 48.1 2,958,646
JACKSON 41.1 1.183 651
MONONA 27.6 804 079
CRAWFORD 31.2 2.016 187
CARROLL 35.6 2.402.045
GREENE 45.1 3,126,118
BOONE 43.2 2894706
STORY 48.4 3,517,003
MARSHALL 41.9 2,712.094
TAMA 44.9 3243823
BENTON 499 4240 611
LINN 49.5 2,819.792
JONES 42.5 1.449.437
CLINTON 45.9 2.052 083
HARRISON 36.1 1.140.104
SHELBY 36.7 1765,042
AUDUBON 33.2 1.258.464
GUTHRIE 38.2 1.809.113
DALLAS 63.9 3.499291
POLK 41 1.955.320
JASPER 40.9 2,874,163
POWESHIEK 48.2 2,407,387
IOWA 45 2268,388
JOHNSON 42.8 2.018.860
CEDAR 50.5 2.020.604
SCOTT 48.8 1.414.401
MUSCATINE 38.2 1244,884
POTTAWATTAMIE 36.9 2.413.958
CASS 40.2 1.749.406
ADAIR 426 1.708.443
MADISON 505 1.193 727
WARREN 51.7 1,724,838
MARION 499 1.902 330
MAHASKA 48.7 2336513
KEOKUK 43.8 1.839 383
WASHINGTON 394 1.741 274
LOUISA 37.9 948.922
MILLS 41 849481
MONTGOMERY 42.1 1,184087
ADAMS 968 964310
UNION 462 1.248.736
CLARKE 51.5 1.336.044
LUCAS 51.6 1,347.549
MONROE 595 910 119
WAPELLO 47.2 1.152.507
JEFFERSON 43.6 1283585
HENRY 498 1,583,116
DES MOINES 50
FREMONT 34.4 44.536
PAGE 41.4 1.081.833
TAYLOR 40.3 1.345 850
RINGGOLD 42.1 1.371.786
DECATUR 46.3 1.122 648
WAYNE 46.8 1498.732
APPANOOSE 51.1 1.065,348
DAVIS 49 1.084515
VAN BUREN 44.3 1.024 623
LEE 48 1.143.374


WINTER WHEAT
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 2,211,817 Bushels
Average per Acre 14.6 Bushels
FARM VALUE DEC. 1, 1917 $1.97 Per bu
TOTAL $4,357,279
LYON 27.7 277
OSCEOLA
DICKINSON 13.5 1328
EMMET 20 80
KOSSUTH 19.8 1640
WINNEBAGO
WORTH 19.6 186
MITCHELL 19. 1025
HOWARD 17.8 1776
WINNESHIEK 18.7 6749
ALLAMAKEE 22.5 14760
SIOUX 18.1 11193
OBRIEN 17.6 582
CLAY 21.5 733
PALOALTO 8 160
HANCOCK None Reported
CERRO GORDO 21.2 1091
FLOYD 26 625
CHICKASAW 17 692
FAYETTE 18.2 3009
CLAYTON 19.5 25982
PLYMOUTH 20.2 19685
CHEROKEE 21.7 585
BUENA VISTA 12.2 1113
POCAHONTAS 10.7 160
HUMBOLDT 11.4 1302
WRIGHT 18 827
FRANKLIN 14.8 519
BUTLER 15.2 293
BREMER 19.3 2429
BLACK HAWK 17.4 1923
BUCHANAN 13.2 1396
DELAWARE 13.6 1267
DUBUQUE 24 9921
WOODBURY 15 83962
IDA 5.3 595
SAC 28.7 860
CALHOUN 9.1 192
WEBSTER 13.1 9771
HAMILTON 21.8 7918
HARDIN 17.2 436
GRUNDY 35 70
TAMA 14.2 3256
BENTON 25.1 1190
LINN 20.5 820
JONES 17.6 1405
JACKSON 16.7 27238
CLINTON 15.3 16847
MONONA 11.6 39246
CRAWFORD 5.5 10922
CARROLL 12.6 5360
GREENE 12.2 6574
BOONE 7 1245
STORY 16.2 3418
MARSHALL 9.7 10209
CEDAR 15 1907
SCOTT 16 11351
HARRISON 10.6 14181
SHELBY 10.4 3050
AUDUBON 16 6345
GUTHRIE 14 12517
DALLAS 18.8 51364
POLK 17.1 72424
JASPER 14.3 15817
POWESHIEK 15.1 3137
IOWA 13.1 6087
JOHNSON 15 3730
MUSCATINE 16.6 9649
POTTAWATTAMIE 13.8 28103
CASS 15.3 20978
ADAIR 14.3 12413
MADISON 18.1 71326
WARREN 18.8 149688
MARION 13.9 73963
MAHASKA 15.2 37891
KEOKUK 13.3 17552
WASHINGTON 12 12191
LOUISA 17.3 84918
MILLS 11.3 26932
MONTGOMERY 13.4 64554
ADAMS
UNION 15.6 18175
CLARKE 12.7 21312
LUCAS 10.9 17432
MONROE 12 33940
WAPELLO 16.1 50399
JEFFERSON 16 29270
HENRY 13.7 25433
DES MOINES 19 103001
FREMONT 15.5 86981
PAGE 16.2 166940
TAYLOR 13.3 47247
RINGGOLD 9.6 16469
DECATUR 6.6 8266
WAYNE 3149
APPANOOSE 9 7155
DAVIS 8.9 6073
VAN BUREN 13.1 5349
LEE 13.6 31910


SPRING WHEAT
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.
LYON 19 12,002
OSCEOLA 17.9 2.153
DICKINSON 16.7 12.255
EMMET 16.9 1.745
KOSSUTH 18.7 7.866
WINNEBAGO 19.6 63,696
WORTH 18.2 41.122
MITCHELL 18.2 29680
HOWARD 16.8 20545
WINNESHIEK 16.3 92809
ALLAMAKEE 20.3 38154
SIOUX 20.7 174171
OBRIEN 20.4 5.084
CLAY 16.9 3,826
PALOALTO 19. 967
HANCOCK 18.3 21685
CERRO GORDO 19.1 10.512
FLOYD 20.9 17.252
CHICKASAW 17.7 40937
FAYETTE 18.8 29,882
CLAYTON 24.5 64500
PLYMOUTH 19.6 506.771
CHEROKEE 23.4 4.814
BUENA VISTA 20.9 2.967
POCAHONTAS 20.3 6.461
HUMBOLDT 19.6 7.032
WRIGHT 18.6 4.544
FRANKLIN 21.7 8328
BUTLER 23.5 10.492
BREMER 22. 8289
WOODBURY 17.6 133.767
IDA 17. 24.060
SAC 18.8 2.009
CALHOUN 21.8 2.055
WEBSTER 21.5 23375
HAMILTON 22.9 6.292
HARDIN 21.3 13.959
GRUNDY 24.3 7.106
BLACK HAWK 24.7 7242
BUCHANAN 28. 13,536
DELAWARE 23.3 13020
DUBUQUE 26.9 39.612
MONONA 15. 135.326
CRAWFORD 18.6 155.048
CARROLL 19.4 58.309
GREENE 22.7 2.408
BOONE 28.2 14.252
STORY 19.2 3101
MARSHALL 24.8 13251
TAMA 25.2 50.741
BENTON 26.6 15402
LINN 26.7 25,062
JONES 31.8 19.481
JACKSON 20.6 31.723
CLINTON 23.9 41282
HARRISON 15.4 213.716
SHELBY 18.4 58.362
AUDUBON 15.5 29.411
GUTHRIE 20. 21.729
DALLAS 18.1 8.595
POLK 22.7 50.882
JASPER 26.9 77,080
POWESHIEK 23.4 24.100
IOWA 27.4 26162
JOHNSON 24.1 13.498
CEDAR 28.1 16393
SCOTT 26.3 30264
MUSCATINE 24.1 19528
POTTAWATTAMIE 21.5 88.804
CASS 19.2 47.528
ADAIR 22 24.529
MADISON 23.8 15.951
WARREN 14.8 18.925
MARION 24.3 47.743
MAHASKA 25.4 25.981
KEOKUK 19.5 46.499
WASHINGTON 25.6 11,029
LOUISA 18. 144.
MILLS 18.5 39.679
MONTGOMERY 18 43.924
ADAMS
UNION 15.4 1.525
CLARKE 21.3 1469
LUCAS 20.3 5.504
MONROE 21.1 16853
WAPELLO 19. 4890
JEFFERSON 20.7 4937
HENRY 23.4 1.171
DES MOINES 20.7 5.947
FREMONT 15.8 11.649
PAGE 19.1 14.188
TAYLOR 19.6 2.887
RINGGOLD 7.2 1.456
DECATUR 15.4 908
WAYNE 14.3 185
APPANOOSE 16.8 3667
DAVIS 18.1 3477
VAN BUREN 18.2 2.168
LEE 13.9 2,389
FARM VALUE DEC. 1, 1917
$1.94 Per bu.
TOTAL $6.165.241
TOTAL YIELD FOR STATE 3.177.908 Bushels
Average per Acre 19.2 Bushels

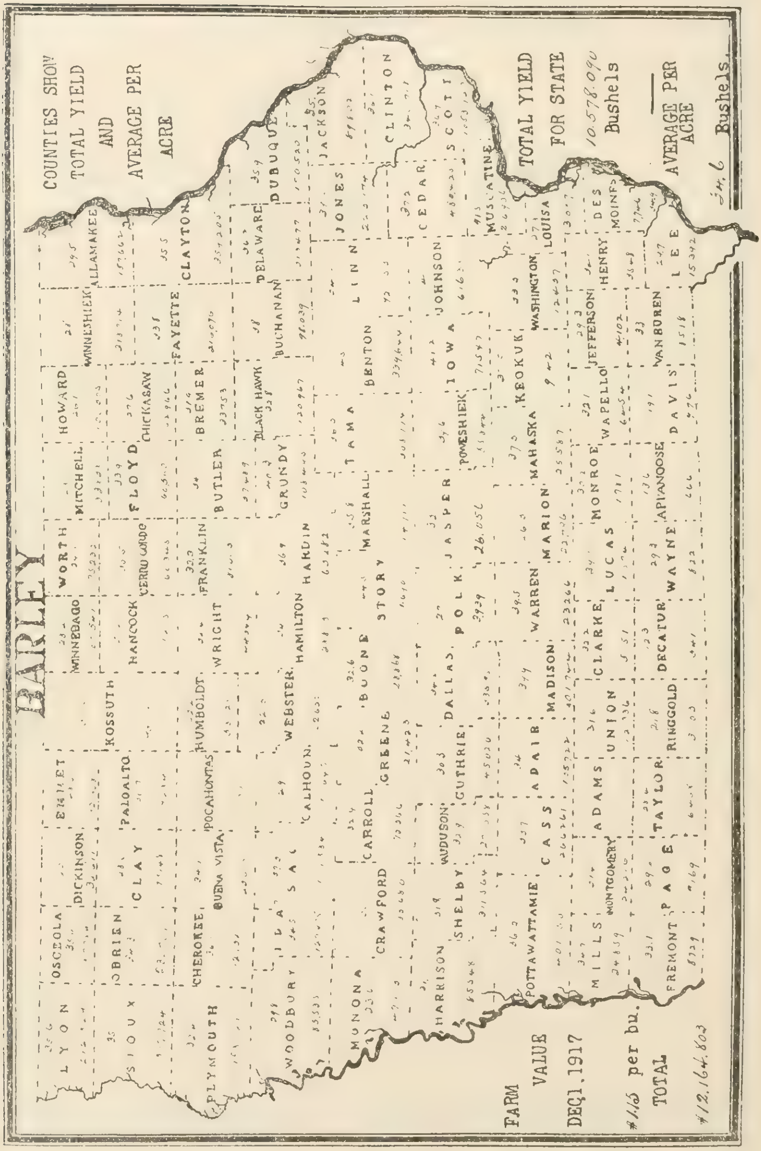

BARLEY
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 10,578,090 Bushels
AVERAGE PER ACRE 34.6 Bushels
FARM VALUE DEC 1, 1917
$1.15 per bu.
TOTAL $12,164,803
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
OBRIEN
CLAY
PALOALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
CLINTON
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
CEDAR
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE
26,050

TABLE NO. 3.

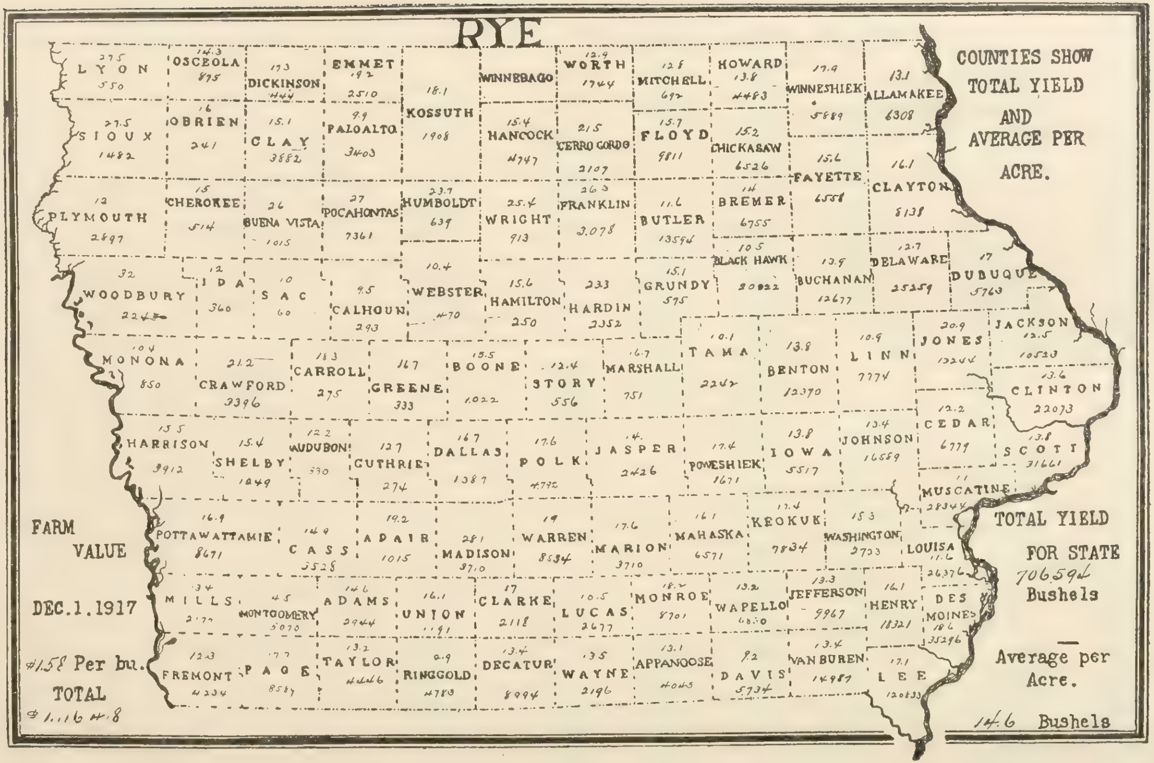
Acreage, yield per acre and total yield of rye, tame hay, wild hay and potatoes and acreage and total yield of alfalfa and flax seed, by counties for the year 1917.

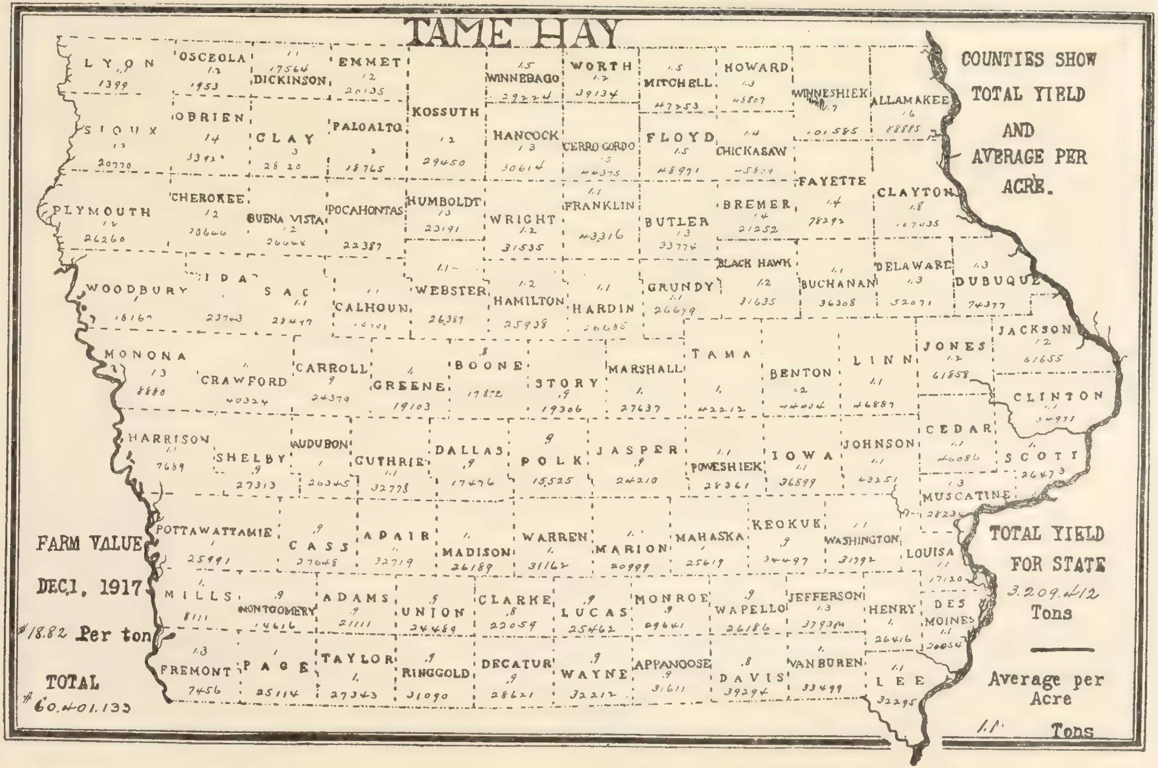
Counties	Rye			Hay (tame)			Hay (wild)			Alfalfa		Potatoes			Flax Seed	
	Acres	Bushels per acre	Total bushels	Acres	Tons per acre	Total tons	Acres	Tons per acre	Total tons	Acres	Total tons	Acres	Bushels per acre	Total bushels	Acres	Total bushels
Adair	53	19.2	1,015	34,030	1.	32,719	2,229	1.5	3,398	86	177	849	67.0	56,888	------	------
Adams	201	14.6	2,944	23,393	.9	21,111	1,640	1.5	2,565	528	825	473	71.	33,606	------	------
Allamakee	480	13.1	6,308	52,991	1.6	88,885	1,017	2.1	2,176	46	115	1,183	110.1	130,218	17	210
Appanoose	309	13.1	4,045	35,617	.9	31,611	738	1.4	1,075	50	48	286	58.6	16,779	------	------
Audubon	27	12.2	330	26,356	1.	26,345	1,979	1.8	3,539	1,037	2,429	844	76.3	64,431	------	------
Benton	899	13.8	12,370	37,864	1.2	44,404	2,135	1.1	2,466	67	135	1,146	74.5	85,331	------	------
Black Hawk	1,904	10.5	20,022	27,302	1.2	31,635	7,889	1.1	8,896	36	37	1,516	76.7	116,220	1	116
Boone	60	15.5	1,022	21,267	.8	17,872	7,200	1.	7,084	252	421	516	67.4	34,808	------	------
Bremer	484	14.	6,755	15,652	1.4	21,252	20,745	1.2	24,956	26	67	1,373	77.5	106,544	------	------
Buchanan	909	13.9	12,677	32,824	1.1	36,308	11,202	1.	11,064	18	33	1,022	81.2	83,024	18	160
Buena Vista	39	26.	1,015	21,614	1.2	26,644	8,842	1.1	10,080	713	1,554	990	96.1	95,186	30	385
Butler	1,176	11.6	13,594	26,924	1.3	33,774	9,737	1.1	11,020	8	38	2,369	57.	134,930	------	------
Calhoun	31	9.5	293	16,961	1.1	19,098	4,010	1.	3,972	253	614	664	74.7	49,585	28	482
Carroll	15	18.3	275	25,250	.9	24,379	7,443	1.4	10,776	472	839	1,690	90.5	152,905	15	165
Cass	237	14.9	3,528	29,753	.9	27,648	1,239	1.4	1,765	547	904	1,128	68.5	77,243	------	------
Cedar	556	12.2	6,779	40,549	1.1	46,086	141	1.1	159	60	100	1,270	62.4	79,295	------	------
Cerro Gordo	98	21.5	2,107	29,580	1.5	44,375	10,170	1.	10,229	120	204	1,358	115.2	156,382	91	810
Cherokee	34	15.	514	23,889	1.2	30,646	8,139	1.1	9,178	2,334	5,007	961	95.3	91,597	------	------
Chickasaw	429	15.2	6,526	31,456	1.4	45,809	12,473	1.2	14,385	5	2	927	101.1	93,708	111	1,068
Clarke	124	17.	2,118	25,740	.8	22,059	32	.9	28	30	55	289	53.	15,310	------	------
Clay	257	15.1	3,882	21,173	1.3	28,120	13,859	1.1	15,133	654	1,245	676	103.7	70,136	405	5,599
Clayton	507	16.1	8,138	6,300	1.8	107,035	1,258	1.3	1,690	53	162	2,013	97.	195,167	------	------
Clinton	1,622	13.6	22,073	50,685	1.1	54,971	1,911	1.1	2,193	124	376	971	82.1	79,744	------	------
Crawford	160	21.2	3,396	41,327	1.	40,324	5,241	1.4	7,335	4,126	8,683	1,492	97.5	145,373	------	------
Dallas	83	16.7	1,387	18,475	.9	17,476	2,652	1.	2,735	366	671	517	63.7	32,956	------	------
Davis	621	9.2	5,734	50,763	.8	39,294	25	1.5	39	39	60	587	50.1	29,898	------	------
Decatur	671	13.4	8,994	30,428	.9	28,621	131	1.1	142	138	204	274	46.	12,612	------	------

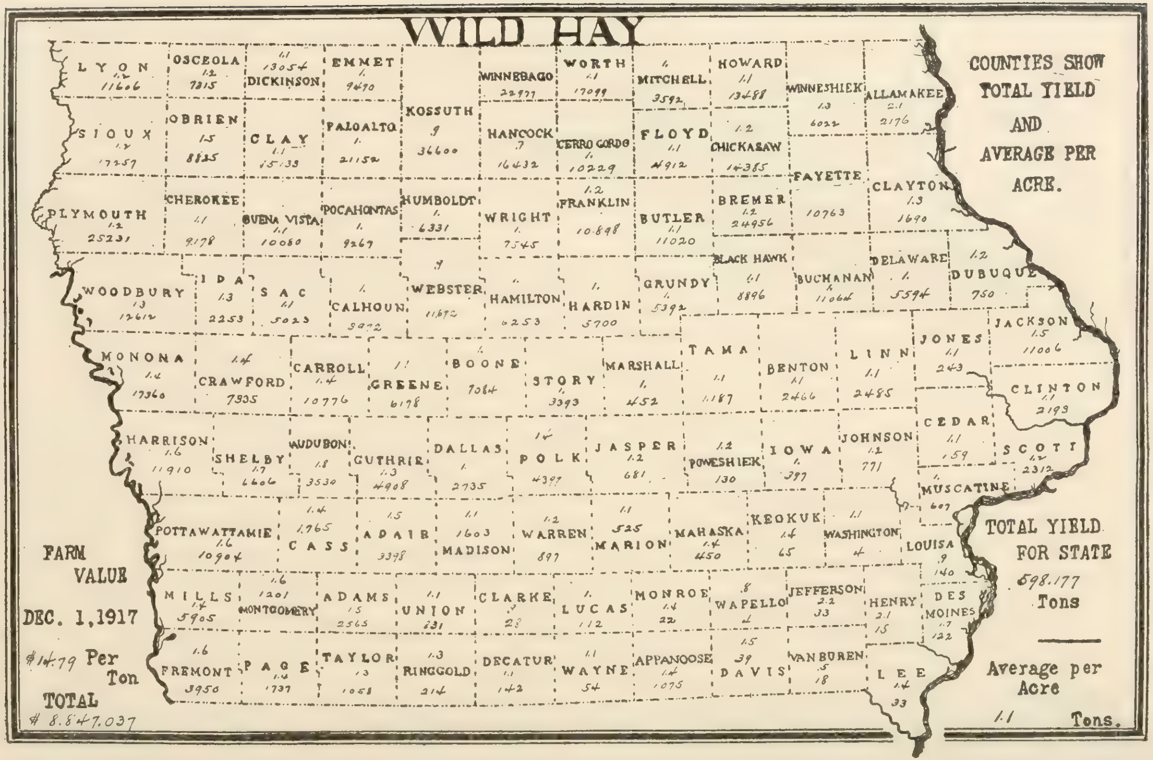
TABLE No. 3—CONTINUED.

Counties	Rye			Hay (tame)			Hay (wild)			Alfalfa		Potatoes			Flax Seed	
	Acres	Bushels per acre	Total bushels	Acres	Tons per acre	Total tons	Acres	Tons per acre	Total tons	Acres	Total tons	Acres	Bushels per acre	Total bushels	Acres	Total bushels
Delaware	1,995	12.7	25,259	40,562	1.3	52,071	5,380	1.	5,594	43	69	1,170	97.	113,435	26	71
Des Moines	1,899	18.6	35,296	18,678	1.1	20,054	73	1.7	122	236	454	762	90.	68,692	------	------
Dickinson	24	17.3	414	15,676	1.1	17,564	12,290	1.1	13,054	206	461	576	65.1	37,493	480	3.779
Dubuque	338	17.	5,763	57,446	1.3	74,377	596	1.2	750	78	180	2,198	102.6	225,562	------	------
Emmet	131	19.2	2,510	16,987	1.2	20,135	9,279	1.	9,470	102	301	490	88.	43,249	413	4,219
Fayette	418	15.6	6,558	53,089	1.4	78,292	10,403	1.	10,763	36	73	1,430	111.9	159,837	16	161
Floyd	624	15.7	9,811	32,530	1.5	48,971	4,276	1.1	4,912	13	25	1,279	102.9	131,549	221	1,834
Franklin	117	26.3	3,078	37,604	1.1	43,316	8,818	1.2	10,898	101	204	1,556	107.4	167,089	10	123
Fremont	336	12.3	4,234	6,894	1.3	7,456	2,424	1.6	3,950	6,772	16,153	618	80.0	49,413	------	------
Greene	20	16.7	333	19,671	1.	19,103	5,779	1.1	6,178	106	239	585	68.3	39,979	------	------
Grundy	38	15.1	575	24,177	1.1	26,699	5,524	1.	5,392	8	19	1,659	99.8	165,585	------	------
Guthrie	22	12.7	274	29,346	1.1	32,778	3,574	1.3	4,908	271	622	597	68.5	40,882	4	35
Hamilton	16	15.6	250	22,692	1.2	25,938	6,288	1.	6,253	153	316	706	70.6	49,871	10	80
Hancock	308	15.4	4,747	24,385	1.3	30,614	23,186	.7	16,432	104	316	1,133	121.9	137,973	497	4,620
Hardin	101	23.3	2,352	24,457	1.1	26,685	5,698	1.	5,700	122	290	984	80.1	78,803	------	------
Harrison	252	15.5	3,912	7.091	1.1	7,689	7,340	1.6	11,910	11,724	24,123	1,008	96.8	97,616	------	------
Henry	1,133	16.1	18,321	26,109	1.	26,416	7	2.1	15	95	210	293	97.2	28,480	------	------
Howard	326	13.8	4,483	36,179	1.3	48,807	12,171	1.1	13,488	6	12	1,013	94.7	95,903	410	3,212
Humboldt	27	23.7	639	18,518	1.3	23,191	6,553	1.	6,331	191	462	504	107.	53,911	92	816
Ida	30	12.	360	23,101	1.	23,743	1,713	1.3	2,253	1,393	2,801	668	89.3	59,679	12	152
Iowa	399	13.8	5,517	32,316	1.1	36,899	383	1.	397	25	85	1,216	80.3	97,687	------	------
Jackson	841	12.5	10,523	51,875	1.2	61,655	729	1.5	1,106	58	171	1,294	78.2	101,209	------	------
Jasper	173	14.	2,426	27,220	.9	24,210	540	1.2	681	96	190	819	65.4	53,567	14	159
Jefferson	747	13.3	9,967	30,226	1.3	37,931	15	2.2	33	17	46	378	80.4	30,392	------	------
Johnson	1,221	13.4	16,589	39,200	1.1	43,251	624	1.2	771	59	108	1,050	91.2	95,842	------	------
Jones	634	20.9	13,244	50,958	1.2	61,858	216	1.1	243	20	58	903	91.	82,221	------	------
Keokuk	450	17.4	7,834	36,358	.9	34,497	45	1.4	65	33	47	765	80.5	61,556	------	------
Kossuth	105	18.1	1,908	33,951	1.2	29,450	38,678	.9	36,600	264	679	1,803	101.	182,086	1,312	12,451
Lee	7,064	17.1	120,833	31,767	1.1	32,295	24	1.4	33	224	471	1,188	74.5	88,550	------	------
Linn	711	10.9	7,774	44,053	1.1	46,887	2,235	1.1	2,485	134	247	1,606	84.5	135,716	------	------
Louisa	2,278	11.6	26.376	15,559	1.1	17,120	148	.9	140	47	46	436	98.1	42,763	------	------

Lucas	350	10.5	2,677	26,947	.9	25,462	111	1.	112	61	120	330	71.6	23,618	------	------
Lyon	20	27.5	550	13,116	1.1	13,991	9,633	1.2	11,606	2,244	4,501	1,716	92.9	159,474	18	283
Madison	133	28.1	3,710	26,332	1.	26,189	1,505	1.1	1,603	168	342	990	55.4	54,876	------	------
Mahaska	401	16.1	6,571	24,229	1.	25,619	301	1.4	450	158	270	1,657	34.6	57,399	------	------
Marion	211	17.6	3,710	21,386	1.	20,999	463	1.1	525	134	220	419	64.6	27,082	------	------
Marshall	45	16.7	751	28,295	1.	27,637	442	1.	452	68	148	899	82.5	72,124	------	------
Mills	163	13.4	2,177	8,111	1.	8,111	4,148	1.4	5,905	7,808	15,879	703	88.1	61,934	------	------
Mitchell	64	12.8	692	30,216	1.5	47,253	3,476	1.	3,592	11	50	2,392	119.9	286,943	539	5,267
Monona	82	10.4	850	7,040	1.3	8,880	12,047	1.4	17,360	10,620	36,397	1,321	43.	56,853	------	------
Monroe	479	18.2	8,701	31,729	.9	29,641	16	1.4	22	16	48	284	51.5	14,637	40	40
Montgomery	350	14.5	5,070	16,293	.9	14,616	754	1.6	1,201	2,961	5,975	630	80.8	60,942	------	------
Muscatine	2,571	11.	28,344	21,616	1.3	28,234	609	1.	607	203	362	1,498	99.3	148,712	------	------
O'Brien	15	16.	241	24,067	1.4	33,923	7,048	1.5	8,825	1,693	3,946	1,185	87.5	103,663	8	140
Osceola	62	14.3	875	16,373	1.2	19,531	6,076	1.2	7,315	132	423	872	96.6	84,222	215	2,360
Page	486	17.7	8,589	25,260	1.	25,114	1,182	1.4	1,737	3,033	7,379	537	83.8	45,039	------	------
Palo Alto	344	9.9	3,403	15,095	1.2	18,765	20,254	1.	21,152	210	474	619	87.7	54,267	397	6,664
Plymouth	241	12.	2,897	21,156	1.2	26,260	20,529	1.2	25,231	10,353	21,012	1,615	86.3	139,381	3	6
Pocahontas	273	27.	7,361	19,843	1.1	22,387	9,666	1.	9,267	186	417	857	86.4	74,081	135	1,517
Polk	273	17.6	14,792	17,916	.9	15,525	3,067	1.4	4,397	421	668	1,176	64.7	76,059	------	------
Pottawattamie	513	16.9	8,671	25,285	1.	25,991	6,944	1.6	10,904	12,655	26,065	2,153	85.	182,966	------	------
Poweshiek	96	17.4	1,671	25,769	1.1	28,361	104	1.2	130	55	109	801	65.8	52,787	------	------
Ringgold	369	12.9	4,782	36,219	.9	31,090	162	1.3	214	33	58	269	78.	20,959	------	------
Sac	6	10.	60	26,066	1.1	28,497	4,474	1.1	5,023	401	897	755	86.	64,970	9	92
Scott	2,283	13.8	31,661	24,609	1.	26,473	1,840	1.2	2,312	514	1,137	4,249	81.	344,550	------	------
Shelby	81	15.4	1,249	30,109	.9	27,313	3,979	1.7	6,606	3,680	5,727	1,110	90.3	100,267	------	------
Sioux	54	27.5	1,482	17,217	1.2	20,770	14,301	1.2	17,257	4,513	9,875	1,291	97.7	126,125	2	22
Story	45	12.4	556	21,328	.9	19,306	3,332	1.	3,393	85	148	186	78.6	14,611	------	------
Tama	222	10.1	2,242	41,219	1.	42,212	1,103	1.1	1,187	66	114	1,233	81.5	100,534	------	------
Taylor	338	13.2	4,446	28,377	1.	27,343	806	1.3	1,058	614	1,195	675	66.1	38,216	------	------
Union	74	16.1	1,191	26,620	.9	24,489	743	1.1	831	70	136	709	63.3	44,865	------	------
Van Buren	1,122	13.4	14,987	32,903	1.	33,499	34	.5	18	232	408	155	70.3	10,904	------	------
Wapello	515	13.2	6,830	28,154	.9	26,186	5	.8	4	183	314	887	63.3	56,123	------	------
Warren	448	19.	8,534	31,019	1.	31,162	736	1.2	897	231	475	557	65.5	36,494	------	------
Washington	149	18.3	2,723	27,781	1.1	31,792	4	1.	4	64	91	541	76.4	41,342	9	130
Wayne	151	13.5	2,196	34,927	.9	32,212	46	1.1	54	22	36	27	42.9	11,563	------	------
Webster	45	10.4	470	23,113	1.1	26,387	12,240	.9	11,672	426	849	1,007	56.3	56,663	34	348
Winnebago	------	------	------	19,219	1.5	29,224	21,136	1.	22,977	29	91	1,438	82.7	118,863	810	7,918
Winneshiek	329	17.9	5,889	56,850	1.7	101,585	4,616	1.3	6,022	17	39	1,380	117.6	162,294	184	1,815
Woodbury	70	32.	2,245	18,086	1.	18,167	9,343	1.3	12,612	15,688	34,201	1,610	86.8	139,847	14	100
Worth	135	12.9	1,744	32,882	1.2	39,134	15,421	1.1	17,099	77	92	859	116.	99,711	1,522	10,972
Wright	36	25.4	913	26,805	1.2	31,585	7,684	1.	7,545	101	256	775	102.	79,107	212	4,448
Total	48,404	14.6	706,594	2,756,425	1.1	3,209,412	529,636	1.1	598,177	115,170	255,487	100,246	85.4	8.561,511	8,384	82,734


RYE
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.
TOTAL YIELD FOR STATE 706594 Bushels
Average per Acre. 14.6 Bushels
FARM VALUE DEC.1.1917 $1.58 Per bu.
TOTAL $1,116 4.8
27.5 LYON 550
14.3 OSCEOLA 895
17.3 DICKINSON 444
19.2 EMMET 2510
18.1 KOSSUTH 1908
WINNEBAGO
12.9 WORTH 1744
12.8 MITCHELL 692
HOWARD 13.8 4483
17.9 WINNESHIEK 5889
13.1 ALLAMAKEE 6308
27.5 SIOUX 1482
16 OBRIEN 241
15.1 CLAY 3882
9.9 PALOALTO 3403
15.4 HANCOCK 4747
21.5 CERRO GORDO 2107
15.7 FLOYD 9811
15.2 CHICKASAW 6526
15.6 FAYETTE 6558
16.1 CLAYTON 8138
12 PLYMOUTH 2897
15 CHEROKEE 514
26 BUENA VISTA 1015
27 POCAHONTAS 7361
23.7 HUMBOLDT 639
25.4 WRIGHT 913
26.3 FRANKLIN 3078
11.6 BUTLER 13594
14 BREMER 6755
10.5 BLACK HAWK 20022
13.9 BUCHANAN 12677
12.7 DELAWARE 25259
17 DUBUQUE 5763
32 WOODBURY 2245
12 IDA 360
10 SAC 60
9.5 CALHOUN 293
10.4 WEBSTER 470
15.6 HAMILTON 250
233 HARDIN 2352
15.1 GRUNDY 575
10.1 TAMA 2242
13.8 BENTON 12370
10.9 LINN 7774
20.9 JONES 13244
JACKSON 12.5 10520
10.4 MONONA 850
21.2 CRAWFORD 3396
18.3 CARROLL 275
16.7 GREENE 333
15.5 BOONE 1022
12.4 STORY 556
16.7 MARSHALL 751
13.6 CLINTON 22073
13.5 HARRISON 9912
15.4 SHELBY 1049
12.2 AUDUBON 330
12.7 GUTHRIE 274
16.7 DALLAS 1387
17.6 POLK 4792
14. JASPER 2426
17.4 POWESHIEK 1671
13.8 IOWA 5517
13.4 JOHNSON 16559
12.2 CEDAR 6779
13.8 SCOTT 31661
11 MUSCATINE 28344
16.9 POTTAWATTAMIE 8671
14.9 CASS 5528
19.2 ADAIR 1015
28.1 MADISON 3710
19 WARREN 8534
17.6 MARION 3710
16.1 MAHASKA 6571
17.4 KEOKUK 7834
15.3 WASHINGTON 2723
LOUISA 11.6 26376
34 MILLS 2122
45 MONTGOMERY 5070
14.6 ADAMS 2944
16.1 UNION 1191
17 CLARKE 2118
10.5 LUCAS 2677
18.2 MONROE 8701
13.2 WAPELLO 6850
13.3 JEFFERSON 9967
16.1 HENRY 18321
DES MOINES 18.6 35296
12.3 FREMONT 4234
17.7 PAGE 8587
13.2 TAYLOR 4446
9.9 RINGGOLD 4780
13.4 DECATUR 8994
13.5 WAYNE 2196
13.1 APPANOOSE 4045
9.2 DAVIS 5734
13.4 VAN BUREN 14987
17.1 LEE 12083


TAME HAY
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.
TOTAL YIELD FOR STATE
3.209.412 Tons
Average per Acre
1.1 Tons
FARM VALUE DEC.1, 1917
$18.82 Per ton
TOTAL
$60.401.133
LYON
1399
OSCEOLA
1.3
1953
DICKINSON
1.1
17564
EMMET
1.2
20135
KOSSUTH
1.2
29450
WINNEBAGO
1.5
29224
WORTH
1.2
39134
MITCHELL
1.5
47253
HOWARD
1.3
48807
WINNESHIEK
1.7
101585
ALLAMAKEE
1.6
88885
SIOUX
1.3
20770
OBRIEN
1.4
33925
CLAY
3
2520
PALOALTO
18765
HANCOCK
1.3
30614
CERRO GORDO
1.5
44375
FLOYD
1.5
48971
CHICKASAW
1.4
45839
FAYETTE
1.4
78292
CLAYTON
1.8
107035
PLYMOUTH
1.2
26260
CHEROKEE
1.2
20646
BUENA VISTA
1.2
26644
POCAHONTAS
22387
HUMBOLDT
1.3
23191
WRIGHT
1.2
31535
FRANKLIN
1.1
43316
BUTLER
1.3
33774
BREMER
1.4
21252
BLACK HAWK
1.2
31635
BUCHANAN
1.1
36308
DELAWARE
1.3
52071
DUBUQUE
1.3
74377
WOODBURY
16160
IDA
23743
SAC
1.1
28477
CALHOUN
1.1
WEBSTER
1.1
26387
HAMILTON
1.2
25938
HARDIN
1.1
26685
GRUNDY
1.1
26679
MONONA
1.3
8880
CRAWFORD
40324
CARROLL
.9
24379
GREENE
1.
19103
BOONE
.8
17872
STORY
.9
19306
MARSHALL
1.
27637
TAMA
1.
42212
BENTON
1.2
44404
LINN
1.1
46887
JONES
1.2
61858
JACKSON
1.2
61655
CLINTON
1.1
34971
HARRISON
1.1
7689
SHELBY
.9
27313
AUDUBON
1
20345
GUTHRIE
1.1
32778
DALLAS
.9
17476
POLK
.9
15525
JASPER
.9
24210
POWESHIEK
1.1
28361
IOWA
1.1
36899
JOHNSON
1.1
43251
CEDAR
1.1
46086
SCOTT
1.
26473
MUSCATINE
1.3
28231
POTTAWATTAMIE
1
25991
CASS
.9
27648
ADAIR
1.
32719
MADISON
1.
26189
WARREN
1.
31162
MARION
1.
20999
MAHASKA
1
25619
KEOKUK
.9
34497
WASHINGTON
1.1
31992
LOUISA
1.1
17120
MILLS
1.
8111
MONTGOMERY
.9
14616
ADAMS
.9
21111
UNION
.9
24459
CLARKE
.8
22059
LUCAS
.9
25462
MONROE
.9
29641
WAPELLO
.9
26186
JEFFERSON
1.3
37934
HENRY
1.
26416
DES MOINES
1.1
20054
FREMONT
1.3
7456
PAGE
1
25114
TAYLOR
1.
27343
RINGGOLD
.9
31090
DECATUR
.9
28621
WAYNE
.9
32212
APPANOOSE
.9
31611
DAVIS
.8
39294
VAN BUREN
1.
33499
LEE
1.1
32295



WILD HAY

COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.

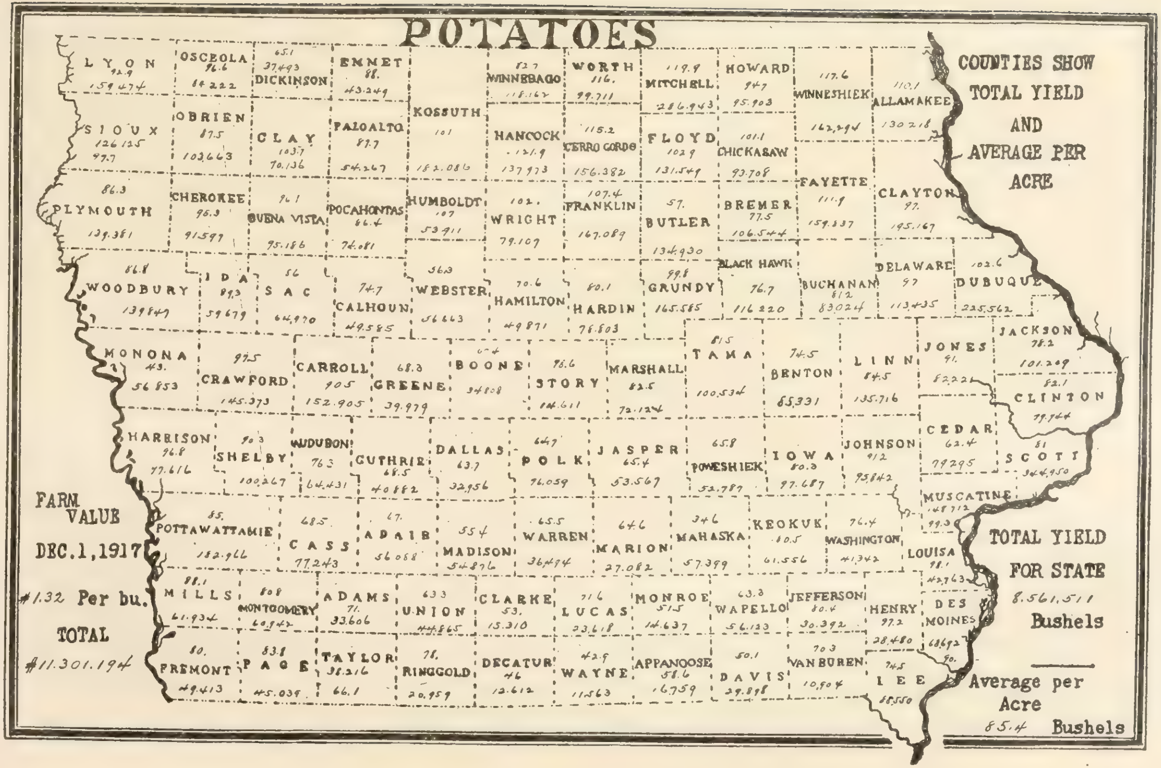
TOTAL YIELD FOR STATE 598.177 Tons

Average per Acre 1.1 Tons.

FARM VALUE DEC. 1, 1917 $14.79 Per Ton

TOTAL $ 8.847.037

LYON 1.2 11606
OSCEOLA 1.2 7315
DICKINSON 1.1 13054
EMMET 1. 9470
KOSSUTH .9 36600
WINNEBAGO 22977
WORTH 1.1 17099
MITCHELL 1. 3592
HOWARD 1.1 13488
WINNESHIEK 1.3 6022
ALLAMAKEE 2.1 2176
SIOUX 1.2 17257
OBRIEN 1.5 8825
CLAY 1.1 15133
PALOALTO 1. 21152
HANCOCK .7 16432
CERRO GORDO 1. 10229
FLOYD 1.1 4912
CHICKASAW 1.2 14385
FAYETTE 10763
CLAYTON 1.3 1690
PLYMOUTH 1.2 25231
CHEROKEE 1.1 9178
BUENA VISTA 1.1 10080
POCAHONTAS 1. 9267
HUMBOLDT 1. 6331
WRIGHT 1. 7545
FRANKLIN 1.2 10.898
BUTLER 1.1 11020
BREMER 1.2 24956
BLACK HAWK 1.1 8896
BUCHANAN 1. 11064
DELAWARE 1. 5594
DUBUQUE 1.2 750
WOODBURY 1.3 12612
IDA 1.3 2253
SAC 1.1 5023
CALHOUN 1. 3972
WEBSTER .9 11,672
HAMILTON 1. 6253
HARDIN 1. 5700
GRUNDY 1. 5392
TAMA 1.1 1.187
BENTON 1.1 2466
LINN 1.1 2485
JONES 1.1 243
JACKSON 1.5 11006
CLINTON 1.1 2193
MONONA 1.4 17360
CRAWFORD 1.4 7935
CARROLL 1.4 10776
GREENE 1.1 6178
BOONE 1. 7084
STORY 1. 3393
MARSHALL 1. 452
CEDAR 1.1 159
SCOTT 1.2 2312
HARRISON 1.6 11910
SHELBY 1.7 6606
AUDUBON 1.8 3530
GUTHRIE 1.3 4908
DALLAS 1. 2735
POLK 1.4 4397
JASPER 1.2 681
POWESHIEK 1.2 130
IOWA 1. 397
JOHNSON 1.2 771
MUSCATINE 1. 607
POTTAWATTAMIE 1.6 10904
CASS 1.4 1765
ADAIR 1.5 3398
MADISON 1.1 1603
WARREN 1.2 897
MARION 1.1 525
MAHASKA 1.4 450
KEOKUK 1.4 65
WASHINGTON 1.1 4
LOUISA .9 140
MILLS 1.4 5905
MONTGOMERY 1.6 1201
ADAMS 1.5 2565
UNION 1.1 231
CLARKE .9 28
LUCAS 1. 112
MONROE 1.4 22
WAPELLO .8 4
JEFFERSON 2.2 33
HENRY 2.1 15
DES MOINES 1.7 122
FREMONT 1.6 3950
PAGE 1.4 1737
TAYLOR 1.3 1058
RINGGOLD 1.3 214
DECATUR 1.1 142
WAYNE 1.1 54
APPANOOSE 1.4 1075
DAVIS 1.5 39
VAN BUREN .5 18
LEE 1.4 33


POTATOES
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
LYON 92.9 159.474
OSCEOLA 96.6 84.222
DICKINSON 65.1 37.493
EMMET 88. 43.249
KOSSUTH 101 182.086
WINNEBAGO 127 118.162
WORTH 116. 99.711
MITCHELL 119.9 286.943
HOWARD 94.7 95.903
WINNESHIEK 117.6 162.294
ALLAMAKEE 110.1 130.218
SIOUX 126.125 97.7
OBRIEN 87.5 103.663
CLAY 103.7 70.136
PALOALTO 89.7 54.267
HANCOCK 121.9 137.973
CERRO GORDO 115.2 156.382
FLOYD 102.9 131.549
CHICKASAW 101.1 93.708
FAYETTE 111.9 159.337
CLAYTON 97. 195.167
PLYMOUTH 86.3 139.381
CHEROKEE 96.3 91.597
BUENA VISTA 96.1 95.186
POCAHONTAS 66.4 76.081
HUMBOLDT 107 53.911
WRIGHT 102. 79.107
FRANKLIN 107.4 167.089
BUTLER 57. 134.930
BREMER 77.5 106.544
WOODBURY 86.8 139.849
IDA 89.3 59.679
SAC 56 64.970
CALHOUN 74.7 49.585
WEBSTER 56.3 56.663
HAMILTON 70.6 49.871
HARDIN 80.1 76.803
GRUNDY 99.8 165.585
BLACK HAWK 76.7 116.220
BUCHANAN 81.2 83.024
DELAWARE 97 113.435
DUBUQUE 102.6 225.562
MONONA 43. 56.853
CRAWFORD 97.5 145.373
CARROLL 90.5 152.905
GREENE 68.3 39.979
BOONE 60.4 34.808
STORY 76.6 14.611
MARSHALL 82.5 72.124
TAMA 81.5 100.534
BENTON 74.5 65.331
LINN 84.5 135.716
JONES 91. 82.221
JACKSON 78.2 101.209
CLINTON 82.1 79.744
HARRISON 96.8 77.616
SHELBY 90.3 100.267
AUDUBON 76.3 64.431
GUTHRIE 68.5 40.882
DALLAS 63.7 32.956
POLK 64.7 76.059
JASPER 65.4 53.567
POWESHIEK 65.8 52.787
IOWA 80.3 97.687
JOHNSON 91.2 95.842
CEDAR 62.4 79.295
SCOTT 81 344.950
MUSCATINE 99.3 148.712
POTTAWATTAMIE 85. 182.966
CASS 68.5 77.243
ADAIR 67. 56.068
MADISON 55.4 54.876
WARREN 65.5 36.494
MARION 64.6 27.082
MAHASKA 34.6 57.399
KEOKUK 80.5 61.556
WASHINGTON 76.4 41.342
LOUISA 98.1 42.763
MILLS 98.1 61.934
MONTGOMERY 80.8 60.942
ADAMS 71. 33.606
UNION 63.3 44.865
CLARKE 53. 15.310
LUCAS 71.6 23.618
MONROE 51.5 14.637
WAPELLO 63.3 56.123
JEFFERSON 80.4 30.392
HENRY 97.2 28.480
DES MOINES 90. 68.692
FREMONT 80. 49.413
PAGE 83.8 45.039
TAYLOR 38.216 66.1
RINGGOLD 78. 20.959
DECATUR 46 12.612
WAYNE 42.9 11.563
APPANOOSE 58.6 16.759
DAVIS 50.1 29.898
VAN BUREN 70.3 10.904
LEE 74.5 68.550
FARM VALUE DEC.1,1917
$1.32 Per bu.
TOTAL
$11.301.194
TOTAL YIELD FOR STATE
8.561.511
Bushels
Average per Acre
85.4 Bushels

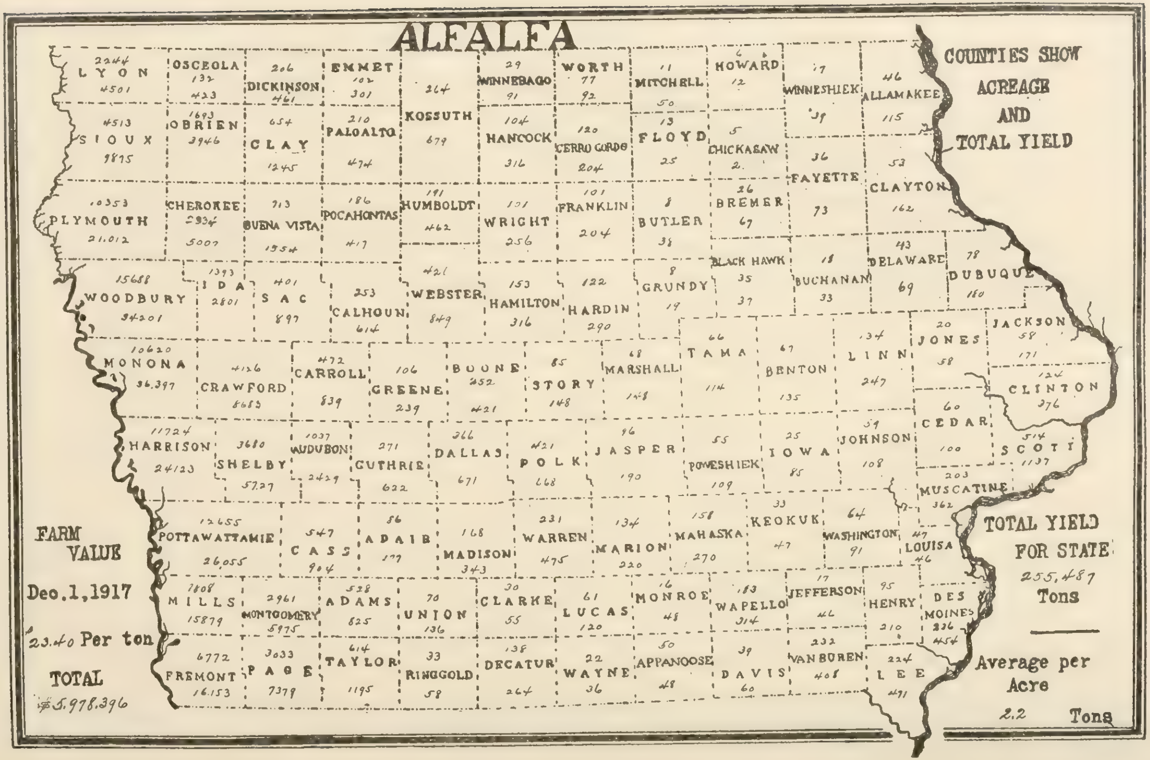

ALFALFA
COUNTIES SHOW ACREAGE AND TOTAL YIELD
LYON 2244 4501
OSCEOLA 132 423
DICKINSON 206 461
EMMET 102 301
KOSSUTH 264 679
WINNEBAGO 29 91
WORTH 77 92
MITCHELL 11 50
HOWARD 6 12
WINNESHIEK 17 39
ALLAMAKEE 46 115
SIOUX 4513 9875
OBRIEN 1693 3946
CLAY 654 1245
PALOALTO 210 474
HANCOCK 104 316
CERRO GORDO 120 204
FLOYD 13 25
CHICKASAW 5 2.
FAYETTE 36 73
CLAYTON 53 162
PLYMOUTH 10353 21,012
CHEROKEE 2934 5007
BUENA VISTA 713 1554
POCAHONTAS 186 417
HUMBOLDT 191 462
WRIGHT 131 256
FRANKLIN 101 204
BUTLER 8 38
BREMER 26 67
BLACK HAWK 35 37
BUCHANAN 18 33
DELAWARE 43 69
DUBUQUE 78 160
WOODBURY 15688 34201
IDA 1393 2801
SAC 401 897
CALHOUN 253 614
WEBSTER 421 849
HAMILTON 153 316
HARDIN 122 290
GRUNDY 8 19
TAMA 66 114
BENTON 67 135
LINN 134 247
JONES 20 58
JACKSON 58 171
MONONA 10620 36,397
CRAWFORD 4126 8685
CARROLL 472 839
GREENE 106 239
BOONE 252 421
STORY 85 148
MARSHALL 68 148
CLINTON 124 276
CEDAR 60 100
HARRISON 11724 24123
SHELBY 3680 5727
AUDUBON 1037 2429
GUTHRIE 271 622
DALLAS 266 671
POLK 421 668
JASPER 96 190
POWESHIEK 55 109
IOWA 25 85
JOHNSON 59 108
SCOTT 514 1137
MUSCATINE 203 362
POTTAWATTAMIE 12655 26,055
CASS 547 904
ADAIR 56 177
MADISON 168 343
WARREN 231 475
MARION 134 220
MAHASKA 158 270
KEOKUK 33 47
WASHINGTON 64 91
LOUISA 47 46
MILLS 7808 15879
MONTGOMERY 2961 5975
ADAMS 528 825
UNION 70 136
CLARKE 30 55
LUCAS 61 120
MONROE 16 48
WAPELLO 183 314
JEFFERSON 17 44
HENRY 95 210
DES MOINES 236 454
FREMONT 6772 16,153
PAGE 3033 7379
TAYLOR 614 1195
RINGGOLD 33 58
DECATUR 138 264
WAYNE 22 36
APPANOOSE 50 48
DAVIS 39 60
VAN BUREN 232 408
LEE 224 491
TOTAL YIELD FOR STATE
255,487 Tons
Average per Acre
2.2 Tons
FARM VALUE
Dec. 1, 1917
23.40 Per ton
TOTAL
$5,978,396

TABLE No. 4.

Number of horses all ages, mules all ages, and number of swine January 1, 1918. Number of swine lost from hog cholera, 1917. Number dairy cows kept for milk, number other cattle not kept for milk and total number cattle all ages. Number sheep kept on farms, number shipped in for feeding. Number pounds wool clipped. Total number all varieties poultry on farms, January 1, 1918, and total number dozen eggs received by counties for the year 1917.

Counties	Horses (all ages)	Mules (all ages)	Swine on farms Jan. 1, 1918	Swine lost by cholera, 1917	Cattle			Sheep			Poultry	
					Cows and heifers kept for milk	Other cattle not kept for milk	Total cattle (all ages)	Sheep, all ages on farms	Sheep shipped in for feeding	Total pounds wool clipped	No. all varieties on farms Jan. 1, 1918	No. dozen eggs received (estimated)
Adair	15,002	1,172	85,631	2,652	9,899	42,401	52,300	18,401	4,267	73,530	276,640	1,049,080
Adams	11,153	1,101	60,289	1,437	5,923	30,051	35,964	12,555	1,746	66,007	209,832	846,224
Allamakee	11,343	118	32,484	7	19,359	35,349	54,708	6,189	185	36,212	177,959	1,333,019
Appanoose	9,977	838	22,150	587	9,089	14,574	27,562	18,209	460	102,418	174,406	613,745
Audubon	12,686	387	81,124	1,715	9,282	27,930	46,743	5,889	8,022	15,770	212,560	944,926
Benton	18,726	561	105,608	7,918	11,606	48,205	59,811	4,359	771	25,611	299,485	1,016,503
Black Hawk	13,736	233	81,250	2,375	16,668	24,097	47,138	1,914	578	13,800	252,985	1,065,586
Boone	16,973	921	66,646	774	11,430	29,501	40,931	2,739	1,550	11,147	305,080	1,314,610
Bremer	9,892	109	53,378	309	19,488	14,881	34,252	909	--------	4,521	223,645	736,013
Buchanan	13,660	414	60,091	244	14,519	28,634	43,153	4,618	411	29,705	263,502	983,759
Buena Vista	15,143	536	97,887	1,408	10,459	26,565	48,052	4,205	2,610	13,070	259,595	816,161
Butler	14,390	188	62,458	277	15,114	33,521	48,635	3,904	1,187	20,980	302,590	927,956
Calhoun	16,530	675	58,272	1,360	8,292	20,884	29,176	1,739	2,768	9,725	252,337	764,065
Carroll	14,066	710	87,131	2,365	10,715	31,371	42,886	1,352	644	6,159	219,618	1,031,898
Cass	15,788	1,469	103,800	2,434	8,273	41,188	50,929	19,298	5,060	96,380	250,968	1,002,519
Cedar	15,221	850	115,919	4,723	13,238	37,532	50,768	7,830	1,337	40,371	256,422	961,249
Cerro Gordo	13,850	213	56,797	360	13,341	33,241	46,582	2,739	418	14,516	211,981	752,560
Cherokee	14,714	388	114,181	1,895	7,434	44,930	52,364	3,931	1,388	3,779	228,612	879,222
Chickasaw	12,049	75	35,765	--------	16,283	22,989	43,846	2,567	--------	14,959	220,802	1,150,462
Clarke	8,834	689	35,518	692	5,512	24,015	29,545	9,031	467	42,745	172,853	657,705
Clay	13,489	331	74,382	1,912	9,627	41,282	51,253	2,774	738	18,485	213,784	729,990
Clayton	16,082	104	65,122	--------	24,130	37,126	61,956	6,238	256	42,187	315,859	1,217,206
Clinton	14,971	250	86,401	131	15,479	42,400	58,620	4,004	3,665	18,394	278,396	820,870
Crawford	17,092	1,072	140,305	5,343	12,919	57,248	73,500	2,871	2,225	10,090	295,760	1,072,804
Dallas	15,097	1,096	85,128	1,902	13,827	27,134	38,740	9,837	5,882	37,357	277,342	1,357,643

TABLE No. 4—CONTINUED.

Counties	Horses (all ages)	Mules (all ages)	Swine on farms Jan. 1, 1918	Swine lost by cholera, 1917	Cattle			Sheep			Poultry	
					Cows and heifers kept for milk	Other cattle not kept for milk	Total cattle (all ages)	Sheep, all ages on farms	Sheep shipped in for feeding	Total pounds wool clipped	No. all varieties on farms Jan. 1, 1918	No. dozen eggs received (estimated)
Davis	10,945	668	26,457	--------	9,135	17,830	27,836	49,305	850	239,266	309,779	994,047
Decatur	10,757	1,020	41,909	294	6,232	21,172	29,784	11,766	3,788	49,192	203,065	831,710
Delaware	13,458	313	62,463	2,175	20,548	25,470	46,018	4,671	1,342	24,945	312,897	937,837
Des Moines	10,023	304	52,400	988	7,417	14,852	22,269	3,624	--------	17,507	187,436	646,514
Dickinson	8,536	262	37,250	333	7,582	20,377	28,572	3,768	822	11,830	120,772	376,931
Dubuque	10,953	117	46,344	927	18,423	26,410	47,567	3,520	277	28,354	236,971	943,797
Emmet	9,199	256	39,562	978	7,872	20,157	28,171	2,391	355	6,640	134,904	507,345
Fayette	16,568	260	61,502	120	24,524	40,658	65,182	5,830	1,108	34,374	352,889	1,517,785
Floyd	13,102	138	52,717	832	10,862	30,681	41,524	5,133	897	29,686	224,436	873,448
Franklin	15,032	333	76,232	999	12,635	36,788	49,726	14,329	19,805	21,631	288,300	872,590
Fremont	9,455	1,914	54,442	3,622	4,976	16,226	26,055	987	1,259	4,858	164,093	543,588
Greene	16,191	793	78,469	3,556	7,814	30,233	40,518	2,713	800	19,137	280,899	1,063,177
Grundy	14,133	332	78,934	2,599	11,193	29,959	47,744	2,084	3,004	3,970	274,068	1,003,317
Guthrie	16,271	840	81,373	1,630	9,889	39,263	49,020	15,290	9,370	45,551	242,398	965,410
Hamilton	17,329	775	87,330	3,216	10,522	32,550	43,072	2,353	802	10,185	314,575	967,855
Hancock	14,624	236	58,173	285	12,743	25,883	41,483	2,230	1,836	5,979	268,644	796,557
Hardin	14,517	543	80,119	1,777	11,776	29,923	45,662	3,439	2,689	14,510	276,496	1,066,186
Harrison	14,270	1,831	97,650	2,243	10,017	29,581	39,598	2,703	12,528	51,860	313,809	1,270,099
Henry	14,629	540	52,454	675	6,776	22,222	28,998	15,700	1,062	79,304	203,872	860,773
Howard	10,550	110	28,157	5	14,506	28,557	43,066	3,055	20	17,981	159,813	531,902
Humboldt	10,664	422	64,542	1,142	8,151	21,355	32,378	1,336	761	6,742	178,428	628,085
Ida	12,058	631	100,249	3,634	5,663	40,395	46,266	3,746	9,616	4,650	277,457	634,645
Iowa	13,803	1,144	104,122	2,035	9,864	23,373	49,566	4,566	400	29,184	280,317	919,189
Jackson	10,209	221	43,901	180	14,771	31,838	49,997	2,993	41	18,941	210,276	656,913
Jasper	20,599	954	115,519	6,400	10,212	45,901	56,264	11,832	12,299	46,649	405,744	1,858,027
Jefferson	11,880	436	47,636	129	7,045	21,213	31,258	10,692	664	59,645	386,056	1,872,672
Johnson	16,135	994	103,308	3,079	8,146	30,475	46,437	6,548	360	42.128	291,677	1,105,112
Jones	12,703	293	75,120	1,883	17,854	32,774	51,956	3,623	1,127	16,335	266,612	1,101,100
Keokuk	16,563	1,394	87,046	658	9,115	28,783	40,749	8,550	855	40,339	343,050	1,314,107
Kossuth	23,843	626	116,449	2,429	20,298	39,045	67,243	3,977	2,283	12,669	413,455	1,374,102
Lee	11,359	723	35,282	143	9,212	19,527	28,739	22,840	1,843	150,773	217,535	832,414

Linn	18,299	507	97,917	1,124	16,564	34,730	51,294	6,591	455	43,651	328,717	1,358,556
Louisa	10,024	420	53,416	2,167	4,817	15,397	23,321	2,185	470	12,606	149,046	613,681
Lucas	9,297	1,012	34,958	32	6,482	22,628	29,110	18,188	3,659	93,040	178,721	692,626
Lyon	14,947	103	81,966	5,226	11,445	37,954	49,181	2,596	16,105	6,420	217,109	632,658
Madison	15,566	1,109	80,218	1,110	9,067	40,837	52,909	25,750	5,175	78,391	274,107	1,191,896
Mahaska	17,264	1,366	104,108	2,791	11,367	30,673	42,040	16,581	3,792	108,972	346,475	1,380,654
Marion	15,640	786	74,966	3,159	8,990	26,203	35,173	25,590	23,904	67,380	311,436	1,860,379
Marshall	18,917	873	101,180	2,000	11,187	40,115	56,269	8,588	2,163	38,682	277,670	1,043,486
Mills	10,207	1,251	64,565	1,879	6,192	26,205	32,397	9,288	11,668	31,291	215,594	539,890
Mitchell	11,566	141	36,986	234	11,876	31,348	43,244	2,528	865	13,155	200,444	846,742
Monona	13,885	1,693	77,068	1,853	9,099	28,910	38,009	701	627	1,049	231,323	781,073
Monroe	8,025	686	22,017	86	7,019	20,293	27,312	8,828	449	22,617	166,744	710,642
Montgomery	10,987	1,319	88,839	2,816	6,079	30,706	37,801	6,945	4,274	19,948	202,592	764,729
Muscatine	10,820	640	65,318	718	7,403	19,948	30,691	1,561	360	7,214	244,176	1,087,019
O'Brien	14,613	285	90,309	2,179	11,645	41,500	53,145	1,469	1,218	7,884	216,509	784,739
Osceola	9,844	274	46,522	1,066	8,306	18,861	31,200	1,257	592	7,818	129,603	994,481
Page	15,204	1,724	93,236	4,181	8,581	31,230	46,125	5,185	3,331	37,522	252,018	998,829
Palo Alto	13,121	329	95,187	2,017	13,977	22,406	36,383	1,621	92	8,036	273,689	495,035
Plymouth	21,051	652	154,217	6,748	13,117	59,376	76,626	4,870	4,970	15,731	341,202	1,050,263
Pocahontas	14,492	613	66,649	1,469	8,713	24,243	33,478	1,354	1,033	5,841	274,984	1,065,270
Polk	15,043	1,005	56,795	3,276	10,072	22,921	33,598	3,185	2,449	20,374	276,647	1,011,456
Pottawatamie	22,449	2,392	165,961	9,542	14,283	59,242	75,135	16,799	15,621	26,010	601,403	1,942,346
Poweshiek	16,730	921	102,539	1,622	9,095	32,584	52,700	4,126	250	16,527	264,719	1,097,031
Ringgold	13,032	1,340	44,807	263	9,008	27,623	39,892	9,513	1,043	60,347	251,879	991,511
Sac	14,696	857	85,427	1,601	8,140	33,690	48,955	3,111	4,664	24,244	245,643	774,307
Scott	11,976	498	81,010	1,098	12,775	25,652	42,578	866	179	5,236	267,757	1,109,408
Shelby	15,763	864	120,519	2,593	7,796	52,897	57,358	2,867	4,668	10,022	280,965	1,124,880
Sioux	19,782	329	135,220	6,192	15,496	47,685	67,401	3,235	5,264	8,235	336,221	1,246,087
Story	17,195	914	77,546	2,458	10,464	26,587	37,051	1,206	834	8,513	328,358	1,156,054
Tama	19,727	573	105,450	3,897	12,045	51,607	66,113	5,862	1,588	31,546	384,421	1,526,566
Taylor	15,473	1,154	73,931	1,876	7,735	29,019	41,329	17,881	2,368	85,455	251,452	1,033,649
Union	11,069	725	47,570	978	7,956	26,715	34,689	5,967	345	22,916	185,872	796,265
Van Buren	11,042	893	33,024	5	7,550	20,273	28,791	34,340	1,141	220,651	197,271	1,133,445
Wapello	12,221	712	40,669	1,288	8,372	13,426	23,586	12,624	1,985	74,909	177,543	645,059
Warren	14,805	784	67,286	806	9,692	30,660	40,352	10,371	3,426	43,117	245,852	1,034,488
Washington	14,007	874	110,034	5,597	7,596	33,583	41,176	5,561	767	36,076	281,078	1,087,601
Wayne	13,475	1,357	40,562	89	7,985	25,247	33,352	16,298	2,398	63,464	208,582	1,378,885
Webster	17,720	602	68,281	499	12,903	18,906	39,710	1,118	5	7,558	306,051	1,249,003
Winnebago	10,127	127	42,626	494	13,041	22,238	35,972	1,615	422	6,963	187,645	676,138
Winneshiek	17,229	121	57,217	333	25,260	40,726	70,011	6,781	829	40,071	283,119	1,029,053
Woodbury	20,780	1,344	130,407	7,706	11,922	42,559	57,984	8,019	5,498	23,413	326,018	1,376,084
Worth	12,163	122	33,723	439	11,426	24,307	39,207	1,223	12	5,505	163,834	540,311
Wright	14,644	628	93,688	1,616	9,524	27,560	37,084	4,536	1,118	16,140	222,129	550,971
Total	1,395,639	68,842	7,298,762	188,909	1,099,761	3,039,790	4,331,864	722,266	285,373	3,397,273	25,400,444	97,316,255

TABLE NO. 5.

Acreage and total yield of sweet corn, pop corn, timothy and clover seed by counties for the year 1917.

Counties	Sweet Corn		Pop Corn		Timothy Seed		Clover Seed	
	Acres	Total tons green corn gathered for canning	Acres	Total pounds	Acres	Total bushels	Acres	Total bushels
Adair	16	56	11	11,052	3,015	12,819	18	34
Adams	7	11	7	9,800	1,217	6,743	--------	--------
Allamakee	6	9	1	1,190	4,338	19,219	741	1,820
Appanoose	7	14	47	125,242	9,391	49,131	39	130
Audubon	345	909	3	4,060	753	3,072	82	80
Benton	3,736	8,850	2	2,650	463	2,671	33	99
Black Hawk	3,001	5,450	12	11,740	135	719	27	20
Boone	16	22	2	4,550	93	421	--------	--------
Bremer	1,006	2,557	1	420	179	752	17	22
Buchanan	832	1,710	13	9,704	686	3,235	--------	--------
Buena Vista	800	2,651	193	88,550	40	165	49	74
Butler	27	18	3	5,600	593	2,832	1	13
Calhoun	314	757	1	1,400	20	137	129	195
Carroll	--------	--------	139	50,290	138	574	97	136
Cass	1,241	3,026	34	19,830	247	1,322	5	5
Cedar	315	717	45	85,540	1,158	7,527	63	87
Cerro Gordo	52	41	16	14,870	182	575	83	126
Cherokee	--------	--------	107	181,120	73	382	187	258
Chickasaw	--------	--------	--------	------------	6,810	23,290	70	109
Clarke	--------	--------	--------	------------	9,292	41,531	17	49
Clay	9	5	112	57,770	907	4,767	125	115
Clayton	579	1,322	13	28,050	3,192	19,308	2,010	2,536
Clinton	39	57	1	700	445	2,202	22	51
Crawford	1	1	402	562,500	261	1,246	98	98
Dallas	710	1,579	2	7,000	152	892	16	32
Davis	4	6	8	12,200	21,768	70,836	51	74
Decatur	16	16	34	35,700	9,653	47,650	18	53
Delaware	261	463	7	9,200	973	4,930	147	140
Des Moines	42	49	--------	------------	246	1,871	111	270
Dickinson	--------	--------	39	14,150	548	2,233	143	101
Dubuque	237	621	1	770	861	4,472	1,014	1,161
Emmet	2	2	--------	------------	59	210	74	61
Fayette	383	1,256	11	6,910	5,170	23,831	107	161
Floyd	2	1	6	7,490	1,469	5,761	106	128
Franklin	1,270	3,574	15	8,171	102	270	29	27
Fremont	801	1,541	1	1,120	22	97	166	217
Greene	--------	--------	20	21,200	89	594	47	17
Grundy	--------	--------	--------	------------	105	655	--------	--------
Guthrie	58	80	127	289,250	3,626	12,241	322	395
Hamilton	8	6	5	6,720	174	604	49	51
Hancock	175	411	1	770	50	140	53	48
Hardin	2	2	147	266,000	68	402	--------	--------
Harrison	9	13	22	23,240	34	102	87	264
Henry	1,029	2,339	--------	------------	1,368	5,173	255	412
Howard	--------	--------	--------	------------	5,347	16,069	--------	--------
Humboldt	2	4	18	14,995	112	680	102	89
Ida	8	21	8,954	13,772,870	27	86	32	55
Iowa	655	1,335	1	1,060	8,959	53,199	74	116
Jackson	5	4	1	1,330	1,597	8,617	1,753	1,709
Jasper	327	868	20	7,000	257	1,379	--------	--------
Jefferson	--------	--------	1	1,050	2,180	11,767	500	1,211
Johnson	448	1,191	69	73,360	1,140	6,787	27	88
Jones	270	528	--------	------------	535	2,882	328	277
Keokuk	8	15	3	3,054	1,481	8,972	69	111
Kossuth	25	60	12	53,830	59	294	51	55
Lee	103	207	11	17,010	2,995	15,615	119	470
Linn	598	1,293	90	127,890	616	3,090	123	219
Louisa	1,209	2,374	--------	------------	292	1,391	20	18

TABLE NO. 5—Continued.

Counties	Sweet Corn		Pop Corn		Timothy Seed		Clover Seed	
	Acres	Total tons green corn gathered for canning	Acres	Total pounds	Acres	Total bushels	Acres	Total bushels
Lucas	12	27	8	9,080	11,106	59,094	--------	--------
Lyon	--------	--------	--------	------------	60	402	20	12
Madison	103	230	5	3,850	1,568	7,512	10	48
Mahaska	67	57	13	9,540	458	1,637	77	119
Marion	10	10	12	21,350	490	2,775	37	32
Marshall	2,076	9,351	27	63,157	273	1,314	101	444
Mills	15	55	3	5,950	36	131	12	7
Mitchell	163	169	12	19,250	3,157	11,540	57	47
Monona	3	2	62	144,140	60	210	139	646
Monroe	--------	--------	1	3,780	1,888	9,714	26	27
Montgomery	652	656	2	1,470	289	1,407	69	83
Muscatine	144	150	25	30,432	387	2,604	--------	--------
O'Brien	7	20	10	20,170	663	3,291	79	55
Osceola	--------	--------	6	10,360	906	3,913	155	295
Page	20	21	5	4,667	243	1,065	143	349
Palo Alto	--------	--------	1	1,470	46	111	--------	--------
Plymouth	60	85	25	31,400	126	739	142	214
Pocahontas	14	11	20	20,860	78	471	214	240
Polk	1,877	4,084	33	19,514	71	270	20	11
Pottawattamie	96	135	38	26,321	167	860	54	87
Poweshiek	654	1,690	195	314,367	2,789	17,970	--------	--------
Ringgold	6	4	5	10,850	7,568	37,544	17	5
Sac	750	2,494	6,462	8,958,414	44	199	39	159
Scott	57	78	19	7,355	564	1,145	23	31
Shelby	174	418	--------	------------	274	1,218	71	103
Sioux	--------	--------	36	92,750	74	587	62	175
Story	426	1,515	3	1,447	66	371	--------	--------
Tama	784	1,428	--------	------------	853	4,277	13	10
Taylor	21	28	8	3,840	2,309	13,481	17	55
Union	7	8	1	3,010	5,317	23,374	10	55
Van Buren	12	13	5	2,240	4,629	24,043	216	247
Wapello	85	96	4	4,122	1,538	8,587	71	101
Warren	9	5	2	1,890	2,576	14,222	22	36
Washington	--------	--------	1	1,750	257	1,362	208	221
Wayne	4	1	--------	------------	25,738	115,004	9	55
Webster	13	11	25	46,927	45	190	42	72
Winnebago	773	1,747	1	750	140	530	42	26
Winneshiek	--------	--------	2	820	9,967	39,981	80	120
Woodbury	93	92	138	258,240	370	1,379	503	1,218
Worth	95	149	--------	------------	557	2,230	36	40
Wright	--------	--------	1	900	63	238	213	310
Total	30,407	72,882	18,004	26,216,380	203,572	926,380	12,955	19,842

TABLE NO. 6.

Comparative Table Showing Number of Swine Lost by Cholera in Iowa by Counties in 1917, 1916, 1915, and 1913.

Counties	Swine lost by cholera, 1917	Swine lost by cholera, 1916	Swine lost by cholera, 1915	Swine lost by cholera, 1913	Counties	Swine lost by cholera, 1917	Swine lost by cholera, 1916	Swine lost by cholera, 1915	Swine lost by cholera, 1913
Adair	2,652	2,679	6,791	32,151	Jefferson	129	506	3,719	3,20
Adams	1,437	2,510	6,378	12,080	Johnson	3,079	4,519	14,139	17,64
Allamakee	7	17	86	993	Jones	1,883	1,007	4,563	9,4
Appanoose	587	159	803	1,933	Keokuk	658	2,131	13,659	20,6
Audubon	1,715	2,557	3,628	29,716	Kossuth	2,429	2,707	2,757	78,2
Benton	7,918	3,025	5,994	25,770	Lee	143	354	3,860	6,9
Black Hawk	2,375	1,061	5,422	26,480	Linn	1,124	1,463	3,186	24,1
Boone	774	2,765	1,706	26,810	Louisa	2,167	6,320	11,129	12,6
Bremer	309	126	2,303	8,250	Lucas	32	203	2,523	1,0
Buchanan	244	5	434	22,117	Lyon	5,226	4,886	5,701	70,1
Buena Vista	1,408	5,114	3,482	68,286	Madison	1,110	1,712	6,305	16,5
Butler	277	553	1,261	37,211	Mahaska	2,791	4,311	21,574	30,8
Calhoun	1,360	1,865	1,578	23,755	Marion	3,159	3,063	8,491	27,0
Carroll	2,365	4,051	4,477	39,318	Marshall	2,000	4,642	6,454	48,2
Cass	2,434	5,231	9,279	42,266	Mills	1,879	2,153	4,249	16,6
Cedar	4,723	5,281	12,407	42,729	Mitchell	234	174	1,368	13,8
Cerro Gordo	360	1,368	1,239	43,255	Monona	1,853	1,574	4,961	37,0
Cherokee	1,895	4,497	5,003	63,223	Monroe	86	33	1,313	1,6
Chickasaw	--------	111	2,007	16,595	Montgomery	2,816	2,461	6,882	28,4
Clarke	692	537	2,818	4,918	Muscatine	718	2,372	4,276	11,7
Clay	1,912	2,420	1,453	31,875	O'Brien	2,179	4,761	2,635	58,8
Clayton	--------	654	760	1,700	Osceola	1,066	824	399	36,6
Clinton	131	889	2,198	19,999	Page	4,181	3,711	15,192	30,8
Crawford	5,343	9,354	9,648	71,865	Palo Alto	2,017	3,779	1,701	46,2
Dallas	1,902	1,678	2,311	18,436	Plymouth	6,748	10,610	6,875	105,0
Davis	--------	66	1,704	280	Pocahontas	1,469	3,469	2,318	38,6
Decatur	294	835	2,901	1,237	Polk	3,276	3,117	4,648	20,9
Delaware	2,175	374	1,255	33,348	Pottawattamie	9,542	12,164	21,376	42,0
Des Moines	988	1,731	7,180	9,353	Poweshiek	1,622	2,035	8,301	24,9
Dickinson	333	731	868	17,716	Ringgold	263	135	2,066	8,6
Dubuque	927	1,557	4,257	23,299	Sac	1,601	4,966	4,691	67,7
Emmet	978	1,679	1,873	18,505	Scott	1,098	3,104	4,061	21,8
Fayette	120	351	528	6,158	Shelby	2,593	3,462	7,120	25,1
Floyd	832	470	882	18,046	Sioux	6,192	13,587	11,570	123,1
Franklin	909	896	5,690	31,367	Story	2,458	4,032	3,118	27,6
Fremont	3,622	2,836	7,065	7,271	Tama	3,897	3,175	8,148	31,4
Greene	3,556	1,829	1,790	26,568	Taylor	1,876	760	5,031	18,0
Grundy	2,599	1,031	2,962	23,618	Union	978	1,015	3,585	7,3
Guthrie	1,630	3,460	3,050	30,932	Van Buren	5	712	2,785	2,8
Hamilton	3,216	2,294	2,385	35,526	Wapello	1,288	1,754	6,634	7,6
Hancock	285	284	1,656	38,672	Warren	806	848	4,486	18,2
Hardin	1,777	2,292	5,707	28,015	Washington	5,597	5,917	11,696	24,4
Harrison	2,243	4,084	7,872	20,122	Wayne	89	222	3,245	10,4
Henry	675	977	5,033	2,861	Webster	499	2,284	1,697	40,3
Howard	5	60	1,073	7,223	Winnebago	494	186	2,179	14,6
Humboldt	1,142	3,129	2,372	46,225	Winneshiek	333	2,224	1,999	3,5
Ida	3,634	3,031	4,168	52,358	Woodbury	7,707	6,624	9,819	61,9
Iowa	2,035	4,250	8,939	3,656	Worth	439	317	1,503	16,4
Jackson	180	322	1,453	3,502	Wright	1,616	1,134	2,216	49,7
Jasper	6,400	3,207	9,380	48,499					
					Total	188,909	247,802	476,712	2,709,8

PART XI

Statistical Tables of Iowa's Principal Farm Crops. Also Statistical Tables of the Principal Farm Crops and Live Stock by States, the United States and the World.

CORN CROPS—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	41	230,633,200	$ .25	$ 57,658,300	5,625,200
1885	33	224,636,522	.23	51,666,400	6,803,834
1890	28	239,675,156	.41	98,266,814	8,550,827

CORN CROP—1896-1917.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total	Acreage
1896	39	312,692,210	$ .14	$ 43,916,900	8,043,390
1897	29	239,452,150	.17	40,706,860	8,523,522
1898	34.5	289,214,850	.23	66,519,400	8,896,286
1899	36.3	306,852,710	.23	70,429,410	8,460,521
1900	40.3	345,055,040	.27	93,164,860	8,618,660
1901	26.2	227,908,850	.50	113,954,000	8,687,480
1902	34	296,950,230	.28	82,432,700	8,700,000
1903	31	230,511,310	.36	82,984,071	7,398,320
1904	36	323,853,330	.35	113,348,665	9,000,000
1905	37.2	345,871,840	.35	121,055,144	9,285,150
1906	41	388,836,252	.33	128,155,143	9,443,960
1907	29.6	246,898,460	.44	108,635,322	8,858,000
1908	35.9	301,373,150	.51	153,955,306	8,399,610
1909	34.6	308,036,868	.51	157,098,802	8,681,850
1910	39.8	334,374,428	.36	120,374,794	8,399,712
1911	32.9	281,366,600	.54	151,937,964	8,534,500
1912	45.8	421,368,400	.36	151,698,624	9,199,610
1913	34.9	329,343,000	.59	194,311,370	9,434,500
1914	39	363,689,600	.55	200,029,280	9,324,300
1915	30.0	285,433,000	.45	128,444,850	9,556,400
1916	35	331,582,186	.81	268,581,571	9,479,030
1917	35.8	371,639,819	.97	370,490,625	10,370,727
Average for 22 years	35.8	312,854,740	$ .42	$ 134,646,621	8,842,069

WHEAT—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre spring wheat	Average yield per acre winter wheat	Total yield spring wheat	Total yield winter wheat	Total yield all wheat	Average farm price Dec. 1st.	Total farm value Dec. 1st.	Acreage
1880	10.5	------	------------	------------	36,099,760	$.82	$ 29,501,803	3,437,948
1885	12.	------	------------	------------	31,776,108	.61	19,383,426	2,648,009
1890	11.7	------	------------	------------	25,114,552	.78	19,589,350	2,092,896

WHEAT—1896-1917.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre spring wheat	Average yield per acre winter wheat	Total yield spring wheat	Total yield winter wheat	Total yield all wheat	Average farm price Dec. 1st	Total farm value Dec. 1st	Acreage
1896	13.	17.	7,047,235	3,351,550	10,398,785	$.57	$ 6,020,000	739,245
1897	13.4	13.	12,941,600	1,671,454	14,613,054	.74	10,813,650	1,222,974
1898	14.8	16.5	19,152,352	3,168,916	22,321,268	.53	11,602,000	1,484,682
1899	12.7	11.	19,574,792	226,040	19,800,832	.58	10,701,490	1,559,931
1900	14.3	13.3	20,280,280	1,018,070	21,298,350	.60	12,799,370	1,492,630
1901	15.3	17.6	17,429,230	865,770	18,295,000	.60	10,965,000	1,188,239
1902	13.	18.	12,680,800	825,045	13,505,845	.53	7,062,640	1,021,281
1903	12.6	16.9	9,481,350	1,435,380	10,916,730	.67	7,167,643	837,422
1894	9.1	14.3	7,080,430	1,017,000	8,097,430	.89	7,042,809	846,070
1905	14.4	20.2	5,155,760	1,253,020	6,408,780	.72	4,614,321	420,068
1906	15.	23.	5,603,880	1,566,050	7,169,930	.64	4,579,697	443,810
1907	13.	19.8	4,402,320	1,698,101	6,100,421	.82	4,974,302	424,407
1908	15.4	19.7	4,968,250	1,678,540	6,646,790	.86	5,716,239	408,614
1909	12.5	18.2	3,809,460	3,621,953	7,431,413	.90	6,688,272	502,762
1910	19.3	18.5	6,773,799	3,635,405	10,409,204	.86	8,951,915	546,179
1911	13.1	19.7	4,674,500	3,959,000	8,633,500	.89	7,683,715	559,272
1912	18.7	24.3	9,486,700	8,133,530	17,620,230	.77	13,554,135	840,360
1913	15.1	23.1	5,510,200	11,693,900	17,204,100	.77	13,136,953	871,040
1914	13.	22.	3,389,070	12,038,210	15,427,280	.95	14,862,788	799,435
1915	15.9	21.3	4,155,150	13,352,600	17,507,750	.84	14,614,535	888,960
1916	12.2	15.6	2,111,771	4,621,073	6,732,844	1.56	10,503,237	468,641
1917	19.2	14.6	3,177,908	2,211,817	5,389,725	1.95	10,509,963	315,923
Average for 22 years	14.3	18.1	8,585,765	3,774,656	12,360,421	.83	9,298,394	812,816

OATS—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	35	42,288,800	$ .23	$ 9,496,424	1,179,680
1885	32.5	71,737,900	.21	15,064,959	2,207,320
1890	29	80,002,735	.38	30,401,039	2,758,715

OATS—1896-1917.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1896	26	73,450,000	$ .12	$ 8,814,000	2,825,000
1897	30	132,517,150	.16	21,211,380	4,405,782
1898	32	139,915,340	.21	29,383,220	4,299,243
1899	34.5	140,647,300	.19	26,722,980	4,069,557
1900	35	138,832,300	.20	27,766,460	3,991,690
1901	32	114,883,000	.35	40,209,230	3,799,220
1902	31	92,907,900	.24	22,297,000	3,770,624
1903	25.9	99,012,660	.30	29,703,798	3,822,822
1904	29.4	118,435,570	.26	30,793,284	4,018,980
1905	33.8	146,439,240	.25	36,609,810	4,177,545
1906	34	142,036,530	.27	38,349,878	4,166,800
1907	24.5	111,190,400	.39	43,364,256	4,536,170
1908	25.5	112,830,490	.43	48,517,110	4,431,650
1909	27	117,083,850	.35	40,979,348	4,312,184
1910	36	169,207,098	.27	45,685,916	4,697,749
1911	25.7	120,208,300	.41	59,285,403	4,660,500
1912	44.4	206,949,700	.27	55,876,419	4,665,100
1913	34.2	164,851,000	.34	56,049,340	4,824,400
1914	34	172,696,000	.41	70,805,360	5,154,200
1915	38.6	201,446,400	.32	64,462,848	5,214,90[illegible]
1916	36.5	189,876,501	.49	93,039,485	5,199,269
1917	42.1	227,743,960	.61	138,923,815	5,410,031
Average for 22 years	32.4	142,416,395	$ .31	$ 46,765,925	4,384,244

BARLEY—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage.
1880	23	4,600,000	$ .42	$ 1,932,000	200,000
1885	27	5,737,095	.33	1,893,241	212,485
1890	24	3,664,368	.47	1,722,254	152,682

BARLEY—1896-1917.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value Dec. 1st	Total value	Acreage
1896	29	15,881,618	$ .20	$ 3,176,320	547,642
1897	25	14,076,850	.23	3,237,670	551,867
1898	27.5	14,138,000	.30	4,209,740	509,580
1899	25.6	14,719,310	.30	4,415,570	557,598
1900	25.3	12,695,200	.33	4,189,410	501,740
1901	24.2	14,654,410	.44	6,447,940	604,610
1902	25	15,380,910	.33	5,075,710	594,070
1903	24.7	12,179,790	.37	4,506,522	493,108
1904	25	12,317,710	.34	4,188,021	493,370
1905	27.5	15,566,770	.33	5,137,034	565,700
1906	26.5	14,858,830	.36	5,349,178	558,870
1907	24.6	9,893,330	.60	5,935,998	397,210
1908	26.7	10,629,660	.50	5,314,830	307,408
1909	17.5	10,352,040	.46	4,761,938	562,622
1910	25.9	8,614,541	.56	4,824,143	324,571
1911	22.9	7,197,090	.90	6,447,381	313,147
1912	32.5	9,587,760	.50	4,793,880	294,935
1913	23.8	8,756,300	.53	4,640,839	368,600
1914	26	11,423,310	.56	5,397,053	437,400
1915	30.6	8,591,881	.51	4,381,859	280,520
1916	28.2	7,467,049	.90	6,720,344	265,048
1917	34.6	10,578,090	1.15	12,164,803	305,429
Average for 22 years	26.3	11,798,202	.49	5,241,645	447,048

RYE—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	14	574,000	$ .38	$ 218,120	41,000
1885	15	1,710,000	.42	718,200	114,000
1890	16	1,608,960	.51	820,570	100,560

RYE—1896-1917.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1896	13	1,891,716	$ .25	$ 486,680	121,670
1897	15	3,490,344	.34	1,186,710	226,198
1898	16	3,370,550	.38	1,280,800	210,309
1899	16.3	2,061,160	.40	824,460	126,236
1900	15.6	1,621,130	.43	697,300	103,680
1901	15.8	859,630	.48	859,630	54,390
1902	17	882,830	.40	353,132	55,150
1903	15.6	1,923,060	.44	846,146	123,273
1904	15	1,517,090	.54	819,228	99,500
1905	18	1,283,500	.52	667,420	71,305
1906	17.5	1,093,160	.48	520,719	62,530
1907	17	900,060	.61	549,035	52,975
1908	17.1	869,072	.63	547,515	50,893
1909	13.4	556,846	.60	334,107	41,606
1910	13.8	407,058	.61	248,305	29,502
1911	16.8	486,130	.79	384,043	28,710
1912	20.7	888,530	.61	542,003	42,970
1913	18.3	1,274,500	.59	751,955	69,830
1914	19	1,369,260	.77	1,054,320	73,150
1915	18.6	1,301,140	.77	1,001,877	69,970
1916	12.5	461,210	1.15	530,392	36,886
1917	14.6	706,594	1.58	1,116,418	48,404
Average for 22 years	16.3	1,327,935	.61	709,191	81,779

FLAX—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	10	1,034,200	$ 1.00	$ 1,034,200	103,420
*1885			.94	2,563,293	
1900	10.5	2,929,081	1.10	3,276,989	283,722

*No other data.

FLAX—1896-1917.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1896	9.5	1,946,720	$ .95	$ 1,135,000	199,128
1897	10.	2,498,600	.87	2,173,782	249,882
1898	10.5	2,376,600	.80	1,901,280	225,014
1899	11.2	1,597,790	1.04	1,661,898	142,175
1900	11.7	1,222,980	1.50	1,834,470	108,850
1901	18.8	916,890	1.29	916,890	104,140
1902	8.	755,350	1.00	725,350	94,767
1903	8.7	355,160	.78	277,024	40,823
1904	11.	591,140	1.15	679,811	51,370
1905	9.8	178,770	.90	156,393	17,732
1906	10.7	205,280	.97	200,091	19,160
1907	10.8	461,960	.98	408,640	42,790
1908	11.3	461,580	1.01	466,175	40,833
1909	10.	173,650	1.29	223,647	17,365
1910	8.6	170,387	2.28	388,482	19,821
1911	8.5	173,710	2.00	347,420	20,205
1912	11.3	423,060	1.31	554,208	37,305
1913	10.	223,490	1.36	303,946	22,256
1914	11.	152,280	1.21	184,258	14,440
1915	9.5	127,701	1.57	200,491	13,455
1916	8.5	65,196	2.06	134,304	7,658
1917	9.9	82,734	2.87	237,446	8,384
Average for 22 years	10.4	688,910	1.33	686,864	68,070

POTATOES—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	95	10,165,000	$ .35	$ 3,557,750	107,000
1885	82	12,874,000	.40	5,149,600	157,000
1890	49	8,332,352	.81	6,749,205	170,048

POTATOES—1896-1917.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1896	87	14,814,795	$ .21	$ 2,962,950	170,285
1897	60	10,051,910	.45	4,523,360	163,248
1898	76	12,538,410	.31	3,826,900	164,456
1899	98	15,252,934	.24	3,660,714	154,243
1900	78	10,850,900	.40	4,340,360	149,680
1901	37.4	5,098,460	.90	4,588,610	136,300
1902	91	12,051,670	.34	4,095,650	138,484
1903	53.8	6,082,694	.75	4,562,020	113,433
1904	125	14,255,680	.28	3,991,590	113,250
1905	84	9,352,190	.50	4,676,045	111,335
1906	101	11,697,500	.48	5,614,800	115,310
1907	84	9,847,430	.62	6,105,406	117,350
1908	89.9	10,658,290	.59	6,288,391	118,517
1909	90	12,427,595	.53	6,586,625	138,139
1910	75.3	9,986,881	.58	5,792,391	132,640
1911	71	9,386,390	.71	8,353,887	132,865
1912	104	12,904,500	.44	5,677,980	124,030
1913	47.3	5,532,170	.85	4,702,344	117,000
1914	87	9,540,200	.58	5,533,316	110,205
1915	93	8,002,200	.53	4,241,166	85,140
1916	46.6	4,132,494	1.75	7,231,864	88,691
1917	85.4	8,561,511	1.32	11,301,194	100,246
Average for 22 years	80.2	10,137,582	.61	5,393,526	127,039

HAY—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield tame hay	Total yield—tons	Average yield wild hay	Total yield—tons	Total yield all hay—tons	Average value per ton—tame hay	Average value per ton—wild hay	Total value—all hay	Acreage
*1880 ---	------	-----------	------	-----------	-----------	-------	-------	-----------	----------
*1885 ---	------	-----------	------	-----------	-----------	-------	-------	-----------	----------
1890 ---	1.5	4,991,335	------	-----------	-----------	$ 6.84	-------	$34,140,731	3,327,577

*No authentic data obtainable.

HAY—1896-1917.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield tame hay	Total yield—tons	Average yield wild hay	Total yield—tons	Total yield all hay—tons	Average value per ton—tame hay	Average value per ton—wild hay	Total value—all hay	Acreage
1896 ----	1.5	3,376,440	1.5	2,325,000	5,701,440	$ 4.50	$ 3.30	$22,782,000	3,800,960
1897 ----	1.6	3,362,287	1.3	1,939,117	5,301,404	4.50	3.70	22,304,000	3,315,972
1898 ----	1.7	3,852,561	1.2	1,645,419	5,497,980	4.30	3.50	22,281,000	4,104,967
1899 ----	1.5	4,852,941	1.2	1,458,195	6,311,136	5.75	4.90	29,350,000	3,742,655
1900 ----	1.4	3,609,010	1	1,530,050	5,139,060	6.50	5.00	31,120,000	4,078,960
1901 ----	1.4	3,711,680	1.2	1,268,700	4,980,380	8.25	6.30	38,712,000	3,608,450
1902 ----	1.8	4,439,040	1.3	1,202,860	5,641,900	6.80	5.50	36,787,322	3,391,408
1903 ----	1.9	5,216,404	1.3	1,191,345	6,407,749	5.75	4.95	35,891,480	3,651,894
1904 ----	1.5	4,499,090	1.2	1,091,590	5,590,680	5.62	4.50	30,197,040	3,707,298
1905 ----	1.8	6,477,300	1.2	1,313,310	7,790,610	5.50	4.50	41,535,045	4,692,925
1906 ----	1.3	4,892,950	1.2	1,110,690	6,003,640	7.50	5.50	42,805,920	4,418,600
1907 ----	1.5	5,117,878	1.3	1,172,590	6,290,468	8.50	6.75	51,316,945	4,268,730
1908 ----	1.8	5,838,640	1.6	1,445,989	7,284.629	6.16	5.09	43,326,060	4,146,870
1909 ----	1.7	5,828,580	1.4	1,219,630	7,048,210	7.42	5.90	50,443,781	4,299,740
1910 ----	1.1	3,876,844	1.1	807,280	4,684,124	10.15	8.00	45,808,207	4,367,725
1911 ----	0.8	3,246,200	0.9	683,385	3,929,585	13.44	10.28	50,653,116	4,214,540
1912 ----	1.6	4,287,600	1.4	1,085,440	5,373,040	9.89	7.43	50,469,183	3,682,359
1913 ----	1.5	4,010,300	1.3	910,205	4,920,505	9.93	8.80	47,832,083	3,359,365
1914 ----	1.4	4,234,370	1.3	860,280	5,094,650	10.78	8.28	52,769,626	3,607,320
1915 ----	1.8	5,955,080	1.3	841,463	6,796,543	8.94	7.41	59,473,633	3,870,542
1916 ----	1.4	4,324,165	1.2	645,709	4,969,874	9.00	7.89	44,012,129	3,702,855
1917 ----	1.1	3,209,412	1.1	598,177	3,807,589	18.82	14.79	69,248,170	3,286,061
Average 22 years	1.5	4,464,488	1.3	1,197,565	5,616,600	8.09	6.47	41,778,125	3,878,191

CORN.

Corn: Area and Production in undermentioned countries, 1915-1917.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
NORTH AMERICA	*Acres*	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
United States	106,197,000	105,296,000	119,755,000	2,994,793,000	2,566,927,000	3,159,494,000
Canada:						
Ontario	237,000	160,000	------------	13,860,000	5,960,000	------------
Quebec	16,000	13,000	------------	508,000	322,000	------------
Total Ontario and Quebec	253,000	173,000	------------	14,368,000	6,282,000	------------
Mexico	(1)	(1)	(1)	60,000,000	(1)	(1)
Total	------------	------------	------------	3,069,161,000	------------	------------
SOUTH AMERICA						
Argentina	10,386,000	9,928,000	8,969,000	338,235,000	161,133,000	58,839,000
Chile	80,000	66,000	------------	1,842,000	1,570,000	------------
Uruguay	787,000	697,000	(1)	11,382,000	4,604,000	(1)
Total	------------	------------	------------	351,459,000	------------	------------
EUROPE						
Austria-Hungary:						
Austria	[2]362,000	(1)	(1)	[2]8,050,000	(1)	(1)
Hungary proper	6,194,000	(1)	(1)	180,550,000	(1)	(1)
Croatia-Slavonia	(1)	(1)	(1)	25,000,000	(1)	(1)
Bosnia-Herzegovina	(1)	(1)	(1)	7,000,000	(1)	(1)
Total, Austria-Hungary	------------	------------	------------	220,600,000	------------	------------
Bulgaria	[3]1,571,000	(1)	------------	35,000,000	(1)	(1)
France	935,000	812,000	738,000	17,104,000	(1)	(1)
Italy	3,887,000	3,918,000	3,627,000	121,824,000	81,547,000	87,000,000
Portugal	(1)	(1)	------------	9,275,000	(1)	------------
Roumania	5,207,000	5,056,000	------------	86,412,000	(1)	------------
Russia:						
Russia proper	2,717,000	2,865,000	------------	44,663,000	62,207,000	------------
Northern Caucasia	917,000	(1)	------------	18,520,000	(1)	------------
Total Russia	3,634,000	------------	------------	63,183,000	------------	------------
Serbia	(1)	(1)	(1)	12,000,000	(1)	(1)
Spain	1,172,000	1,154,000	1,102,000	29,096,000	28,642,000	27,557,000
Total	------------	------------	------------	594,494,000	------------	------------
ASIA						
British India	6,073,000	6,735,000	------------	82,200,000	(1)	------------
Japan	143,000	157,000	142,000	4,022,000	4,102,000	3,705,000
Philippine Islands	1,095,000	1,069,000	------------	14,753,000	14,083,000	------------
Total	------------	------------	------------	100,975,000	------------	------------
AFRICA						
Algeria	(1)	(1)	20,000	350,000	(1)	302,000
Egypt	1,987,000	1,850,000	1,735,000	39,803,000	68,362,000	------------
Union of South Africa	2,562,000	2,740,000	2,608,000	36,607,000	25,000,000	34,999,000
Total	------------	------------	------------	76,760,000	------------	------------

[1] No official statistics. [2] Galicia and Bukowina not included. [3] Figures for 1914.

CORN—Continued.

Corn: Area and production in undermentioned countries, 1915-1917—Continued.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
AUSTRALASIA						
Australia:	*Acres*	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
Queensland	176,000	146,000		4,261,000	2,003,000	
New South Wales	144,000	154,000		3,175,000	3,773,000	
Victoria	19,000	22,000		1,018,000	1,000,000	
Western Australia	(1)	(1)		(2)	(2)	
South Australia	(1)	1,000		1,000	16,000	
Total, Australia	340,000	324,000	319,000	8,456,000	6,794,000	8,500,000
New Zealand	5,000	8,000	6,000	284,000	351,000	283,000
Total, Australasia	345,000	332,000	325,000	8,740,000	7,145,000	8,783,000
Grand total				4,201,589,000		

(2) Less than 500 bushels. (1) Less than 500 acres.

Corn: Total Production of countries named in Table 1, 1895-1915.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
1895	2,834,750,000	1901	2,366,883,000	1906	3,963,645,000	1911	3,481,007,000
1896	2,964,435,000	1902	3,187,311,000	1907	3,420,321,000	1912	4,371,888,000
1897	2,587,206,000	1903	3,066,506,000	1908	3,606,931,000	1913	3,587,429,000
1898	2,682,619,000	1904	3,109,252,000	1909	3,563,226,000	1914	3,777,913,000
1899	2,724,100,000	1905	3,461,181,000	1910	4,031,630,000	1915	4,201,589,000
1900	2,792,561,000						

Corn: Acreage, Production and Total Farm Value, by States, 1916 and 1917.

State.	Thousands of acres		Production (thousands of bushels).		Total value, basis Dec. 1 price (thousands of dollars).	
	1917	1916	1917	1916	1917	1916
Maine	20	15	780	645	1,778	768
New Hampshire	26	19	1,092	874	2,370	1,005
Vermont	54	45	2,538	1,935	5,406	2,128
Massachusetts	61	42	2,806	1,764	6,033	2,117
Rhode Island	13	11	546	341	1,289	471
Connecticut	95	70	4,845	3,010	10,417	3,612
New York	840	700	26,040	21,000	51,559	23,100
New Jersey	297	270	12,771	10,800	21,711	10,800
Pennsylvania	1,575	1,450	62,212	56,550	95,184	54,854
Delaware	230	205	7,820	6,970	10,948	6,203
Maryland	720	675	28,080	26,325	39,312	23,429
Virginia	2,450	2,100	72,275	58,800	110,581	64,684
West Virginia	834	740	25,020	22,570	42,534	22,796
North Carolina	3,000	2,600	60,000	48,100	102,000	52,910
South Carolina	2,313	2,065	43,947	32,008	84,378	36,169

CORN—Conntinued.

Corn: Acreage, production, and total farm value by States, 1916-1917—Continued.

State.	Thousands of acres		Production (thousands of bushels).		Total value, basis Dec. 1 price (thousands of dollars).	
	1917	1916	1917	1916	1917	1916
Georgia	4,500	4,000	72,000	62,000	115,200	62,000
Florida	925	820	13,875	12,300	19,425	11,070
Ohio	3,950	3,680	150,100	113,400	204,136	102,060
Indiana	5,651	5,137	203,456	174,658	254,295	146,713
Illinois	11,000	10,200	418,000	300,900	459,800	252,756
Michigan	1,750	1,650	37,625	45,375	68,478	43,106
Wisconsin	1,918	1,690	42,196	60,840	68,779	55,973
Minnesota	3,000	2,600	90,000	87,100	99,000	69,680
Iowa	11,100	10,050	410,700	366,825	443,556	293,460
Missouri	7,200	6,775	252,000	132,112	287,280	118,901
North Dakota	590	510	5,310	13,515	8,018	11,353
South Dakota	3,350	2,950	97,150	84,075	116,580	64,738
Nebraska	9,240	7,400	249,480	192,400	299,376	150,072
Kansas	9,156	6,950	128,184	69,500	160,230	62,550
Kentucky	3,900	3,400	122,850	95,200	148,648	82,824
Tennessee	3,900	3,000	111,150	78,000	133,380	73,320
Alabama	4,825	3,825	77,200	47,812	96,500	48,768
Mississippi	4,100	3,400	84,050	47,600	115,989	46,648
Louisiana	2,347	2,134	42,246	44,814	61,679	42,125
Texas	7,075	6,800	77,825	129,200	129,968	134,368
Oklahoma	3,900	3,950	33,150	53,325	48,730	49,592
Arkansas	2,800	2,550	67,200	45,135	94,080	44,232
Montana	81	74	1,012	1,850	1,771	1,720
Wyoming	33	25	660	550	1,155	495
Colorado	532	475	10,640	7,362	13,300	6,626
New Mexico	170	125	3,400	2,625	6,392	2,966
Arizona	32	22	864	770	1,642	1,078
Utah	20	13	500	429	850	493
Nevada	2	1	60	34	90	42
Idaho	22	21	682	735	1,057	735
Washington	41	38	1,517	1,406	2,458	1,406
Oregon	42	40	1,260	1,340	1,890	1,273
California	75	64	2,400	2,048	4,440	2,540
United States	119,755	105,296	3,159,494	2,566,927	4,053,672	2,280,729

Corn: Yield Per Acre, Price Per Bushel Dec. 1, and Value Per Acre, by States.

State.	Yield per acre (bushels).											Farm price per bushel (cents).						Value per acre (dollars).[1]	
	10-year average, 1908-1917.	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	10-year average, 1908-1917.	1913	1914	1915	1916	1917	5-year average, 1912-1916.	1917
Me.	41.6	40.5	38.0	46.0	44.0	40.0	38.0	46.0	41.0	43.0	39.0	101	87	88	85	119	228	37.91	88.92
N. H.	42.7	39.0	35.1	46.0	45.0	46.0	37.0	46.0	45.0	46.0	42.0	95	81	82	76	115	217	37.86	91.14
Vt.	42.1	40.3	37.0	43.0	41.0	40.0	37.0	47.0	46.0	43.0	47.0	94	81	81	84	110	213	36.56	100.11
Mass.	43.5	40.4	38.0	45.5	44.0	45.0	40.5	47.0	47.0	42.0	46.0	98	85	85	80	120	215	39.40	98.90
R. I.	39.7	42.8	33.2	40.0	45.0	41.5	36.5	42.0	43.0	31.0	42.0	112	99	98	100	138	236	39.92	99.12
Conn.	46.2	41.3	41.0	53.2	48.5	50.0	38.5	46.0	50.0	43.0	51.0	98	85	89	85	120	215	41.25	109.65
N. Y.	36.1	38.8	26.0	38.3	38.5	38.6	28.5	41.0	40.0	30.0	31.0	91	81	83	78	110	198	29.67	61.38
N. J.	38.0	38.0	32.7	36.0	36.8	38.0	39.5	38.5	38.0	40.0	43.0	84	75	76	75	100	170	30.64	73.10
Pa.	39.8	39.5	32.0	41.0	44.5	42.5	39.0	42.5	38.5	39.0	39.5	80	72	73	70	97	153	30.13	60.44
Del.	33.0	32.0	31.0	31.8	34.0	34.0	31.5	36.0	31.5	34.0	34.0	69	59	62	62	89	140	21.61	47.60
Md.	35.8	36.6	21.4	33.5	36.5	36.5	33.0	37.0	35.0	39.0	39.0	73	65	68	61	89	140	24.55	54.60
Va.	25.5	26.0	23.2	25.5	24.0	24.0	26.0	20.5	28.5	28.0	29.5	83	76	81	71	93	153	19.94	45.14
W. Va.	30.2	31.2	31.4	26.0	25.7	33.8	31.0	31.0	31.5	30.5	30.0	87	80	83	74	101	170	25.32	51.00
N. C.	18.9	18.0	16.8	18.6	18.4	18.2	19.5	20.3	21.0	18.5	20.0	94	88	86	77	110	170	17.25	34.00
S. C.	17.4	14.1	16.7	18.5	18.2	17.9	19.5	18.5	16.5	15.5	99.0	102	97	92	87	113	192	16.61	36.48
Ga.	14.7	12.5	13.9	14.5	16.0	13.8	15.5	14.0	15.0	15.5	16.0	93	91	85	78	100	160	12.99	25.60
Fla.	14.0	10.5	12.6	13.0	14.6	13.0	15.0	16.0	15.0	15.0	15.0	87	82	80	73	90	140	11.96	21.00
Ohio	38.4	38.5	39.5	36.5	38.6	42.8	37.5	39.1	41.5	31.5	38.0	67	63	61	56	90	136	23.66	51.68
Ind.	36.3	39.3	40.0	39.3	36.0	40.3	36.0	33.0	38.0	34.0	36.5	62	60	58	51	84	125	21.12	45.00
Ill.	33.9	31.6	35.9	39.1	33.0	40.0	27.0	29.0	36.0	29.5	38.0	62	63	61	54	84	110	19.06	41.80
Mich.	31.7	31.8	35.4	32.4	33.0	34.0	33.5	36.0	32.0	27.5	21.5	78	67	67	68	95	182	22.76	39.13
Wis.	33.3	33.7	33.0	32.5	36.3	35.7	40.5	40.5	23.0	36.0	22.0	73	60	65	68	92	163	23.52	35.86
Minn.	32.6	29.0	34.8	32.7	33.7	34.5	40.0	35.0	23.0	33.5	30.0	60	53	52	62	80	110	18.64	33.00
Iowa	34.9	31.7	31.5	36.3	31.0	43.0	34.0	38.0	30.0	36.5	37.0	58	60	55	51	80	108	20.17	39.96
Mo.	26.8	27.0	26.4	33.0	26.0	32.0	17.5	22.0	29.5	19.5	35.0	67	74	68	57	90	114	15.40	39.90
N. Dak.	22.7	23.8	31.0	14.0	25.0	26.7	28.8	28.0	14.0	26.5	9.0	69	52	58	67	84	151	14.87	13.59
S. Dak.	27.7	29.7	31.7	25.0	22.0	30.6	25.5	26.0	29.0	28.5	29.0	58	56	50	49	77	120	14.95	34.80
Nebr.	24.5	27.0	24.8	25.8	21.0	24.0	15.0	24.5	30.0	26.0	27.0	59	65	53	47	78	120	13.20	32.40
Kans.	17.5	22.0	19.9	19.0	14.5	23.0	3.2	18.5	31.0	10.0	14.0	66	78	63	51	90	125	9.63	17.50
Ky.	27.5	25.2	29.0	29.0	26.0	30.4	20.5	25.0	30.0	28.0	31.5	70	76	64	56	87	121	17.89	38.12
Tenn.	25.2	21.8	22.0	25.9	26.8	26.5	20.5	24.0	27.0	26.0	28.5	73	77	68	58	94	120	17.67	34.20
Ala.	16.1	14.7	13.5	18.0	18.0	17.2	17.3	17.0	17.0	12.5	16.0	86	89	80	69	102	125	13.41	20.00
Miss.	18.2	17.3	14.5	20.5	19.0	18.3	20.0	18.5	19.0	14.0	20.5	82	77	73	65	98	138	13.59	28.29
La.	20.4	19.8	23.0	23.6	18.5	18.0	22.0	19.3	20.5	21.0	18.0	79	77	77	64	94	146	15.30	26.28
Tex.	18.9	25.7	15.0	20.6	9.5	21.0	24.0	19.5	23.5	19.0	11.0	83	82	74	58	104	167	16.19	18.37
Okla.	15.8	24.8	17.0	16.0	6.5	18.7	11.0	12.5	29.5	13.5	8.5	69	72	61	46	93	147	9.94	12.50
Ark.	20.5	20.2	18.0	24.0	20.8	20.4	19.0	17.5	23.0	17.7	24.0	80	78	80	64	98	140	14.91	33.60
Mont.	25.8	23.4	35.0	23.0	26.5	25.5	31.5	28.0	28.0	25.0	12.5	91	77	76	69	93	175	21.19	21.88
Wyo.	22.5	28.0	28.0	10.0	15.0	23.0	29.0	25.0	25.0	22.0	20.0	84	80	70	67	90	175	18.39	35.00
Colo.	19.7	20.2	21.2	19.9	14.0	20.8	15.0	23.0	24.0	15.5	20.0	73	73	60	55	90	125	12.46	25.00
N. Mex.	24.2	27.0	31.3	23.0	24.7	22.4	18.5	28.0	26.0	21.0	20.0	97	77	90	73	113	188	19.16	37.60
Ariz.	31.6	33.2	32.1	32.5	33.0	33.0	28.0	32.0	30.0	35.0	27.0	119	110	120	115	140	190	37.14	51.30
Utah	31.7	29.4	31.4	30.3	35.0	30.0	34.0	35.0	34.0	33.0	25.0	91	70	75	80	115	170	27.54	42.50
Nev.	32.4	----	----	30.0	30.5	30.0	34.0	36.0	35.0	34.0	30.0	108	118	110	93	125	150	36.83	45.00
Idaho	31.8	29.0	30.6	32.0	30.0	32.8	32.0	31.0	35.0	35.0	31.0	82	68	72	65	100	155	24.96	48.05
Wash.	29.3	25.5	27.8	28.0	28.5	27.3	28.0	27.0	27.0	37.0	37.0	88	80	73	77	100	162	24.18	59.94
Oreg.	30.1	27.8	30.7	25.5	28.5	31.5	28.5	30.0	35.0	33.5	30.0	87	70	82	82	95	150	25.74	45.00
Cal.	35.1	32.0	34.8	37.5	36.0	37.0	33.0	36.0	41.0	32.0	32.0	101	88	87	88	124	185	33.51	59.20
U. S.	26.0	26.2	25.5	27.7	23.9	29.2	23.1	25.8	28.2	24.4	26.4	68.7	69.1	64.4	57.5	88.9	128.3	16.94	33.85

WHEAT.

Wheat: Area and Production of Undermentioned Countries, 1915-1917.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
NORTH AMERICA	Acres	Acres	Acres	Bushels	Bushels	Bushels
United States	60,469,000	52,316,000	45,941,000	1,025,801,000	636,318,000	650,828,000
Canada:						
New Brunswick	14,000	14,000	----------	267,000	242,000	----------
Ontario	1,093,000	865,000	----------	30,252,000	17,931,000	----------
Manitoba	2,754,000	2,726,000	----------	79,434,000	29,667,000	----------
Saskatchewan	8,524,000	9,032,000	----------	243,481,000	147,559,000	----------
Alberta	2,156,000	2,605,000	----------	70,476,000	65,088,000	----------
Other	134,000	128,000	----------	2,837,000	2,294,000	----------
Total Canada	14,675,000	15,370,000	14,756,000	426,747,000	262,781,000	----------
Mexico	(1)	(1)	(1)	4,000,000	(1)	(1)
Total	----------	----------	----------	1,456,548,000	----------	----------
SOUTH AMERICA						
Argentina	15,471,000	16,420,000	16,089,000	169,166,000	172,620,000	70,224,000
Chile	1,074,000	1,143,000	----------	19,000,000	20,184,000	24,067,000
Uruguay	783,000	950,000	780,000	3,596,000	9,867,000	5,390,000
Total	----------	----------	----------	191,762,000	202,671,000	99,681,000
EUROPE						
Austria-Hungary:						
Austria	[2]1,588,000	(1)	(1)	[2]28,286,000	(1)	(1)
Hungary proper	8,288,000	(1)	(1)	152,934,000	(1)	(1)
Croatia-Slavonia	(1)	(1)	(1)	15,000,000	(1)	(1)
Bosnia-Herzegovina	(1)	(1)	(1)	3,000,000	(1)	(1)
Total Austria-Hungary	----------	----------	----------	199,220,000	----------	----------
Belgium	[3]400,000	(1)	(1)	8,000,000	(1)	(1)
Bulgaria	[3]2,638,000	(1)	----------	46,212,000	38,241,000	----------
Denmark	164,000	152,000	131,000	7,978,000	6,040,000	4,299,000
Finland	[4]8,000	(1)	(1)	[3]196,000	(1)	----------
France[5]	13,564,000	12,429,000	10,439,000	222,776,000	204,908,000	144,149,000
Germany	4,950,000	(1)	(1)	141,676,000	(1)	(1)
Greece	(1)	(1)	(1)	6,000,000	(1)	(1)
Italy	12,502,000	11,679,000	10,556,000	170,541,000	176,530,000	139,909,000
Montenegro	(1)	(1)	(1)	200,000	(1)	(1)
Netherlands	163,000	136,000	122,000	7,000,000	4,035,000	3,452,000
Norway	14,000	14,000	15,000	285,000	317,000	241,000
Portugal	(1)	(1)	(1)	6,571,000	7,343,000	----------
Roumania	4,705,000	4,844,000	----------	89,241,000	78,520,000	----------
Russia:						
Russia proper[5]	46,531,000	42,030,000	----------	525,673,000	440,082,000	----------
Poland	(1)	(1)	(1)	(1)	(1)	(1)
Northern Caucasia	10,021,000	(1)	(1)	127,631,000	(1)	(1)
Total Russia, European	----------	----------	----------	653,304,000	----------	----------
Serbia	(1)	(1)	(1)	10,000,000	(1)	(1)
Spain	10,037,000	10,148,000	10,360,000	139,298,000	152,329,000	141,087,000
Sweden	299,000	307,000	329,000	9,170,000	8,979,000	7,496,000
Switzerland	114,000	124,000	139,000	3,957,000	4,053,000	4,556,000

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[1] No official statistics.
[4] Figures for 1910.
[3] Figures for 1914.
[2] Galicia and Bukowina not included.
[5] Excludes territory occupied by the enemy.

WHEAT—Conntinued.

Wheat: Area and production in undermentioned countries, 1915-1917—Continued.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
United Kingdom:	*Acres*	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
England	2,122,000	1,862,000	----------	68,437,000	53,262,000	----------
Wales	49,000	50,000	----------	1,421,000	1,466,000	----------
Scotland	77,000	63,000	61,000	3,053,000	2,264,000	----------
Ireland	87,000	76,000	----------	3,339,000	2,916,000	----------
Total United Kingdom	2,335,000	2,051,000	----------	76,250,000	59,908,000	----------
Total	----------	----------	----------	1,797,965,000	----------	----------
ASIA						
British India[1]	32,475,000	30,320,000	32,940,000	376,731,000	323,008,000	379,232,000
Cyprus	(2)	(2)	(2)	1,924,000	(2)	(2)
Japanese Empire:						
Japan	1,227,000	1,302,000	1,269,000	26,778,000	30,047,000	26,532,000
Formosa	17,000	(2)	----------	161,000	(2)	(2)
Chosen[3]	474,000	(2)	(2)	5,851,000	(2)	(2)
Total	1,718,000	----------	----------	32,790,000	----------	----------
Persia	(2)	(2)	----------	16,000,000	(2)	----------
Russia:						
Central Asia (4 Governments of)	5,421,000	(2)	----------	44,132,000	(2)	----------
Siberia (4 Governments of)	7,727,000	(2)	(2)	50,308,000	(2)	----------
Transcaucasia (1 Government)	10,000	(2)	----------	126,000	(2)	----------
Total	13,158,000	----------	----------	94,566,000	----------	----------
Turkey (Asia Minor only)	(2)	(2)	(2)	35,000,000	(2)	(2)
Total				557,011,000	----------	----------
AFRICA	----------	----------	----------			
Algeria	3,209,000	3,272,000	3,222,000	34,654,000	29,151,000	28,979,000
Egypt	1,592,000	1,447,000	1,116,000	39,144,000	36,543,000	29,834,000
Tunis	1,112,000	1,482,000	1,310,000	11,023,000	7,165,000	6,963,000
Union of South Africa	725,000	785,000	755,000	7,047,000	6,477,000	4,790,000
Total				91,868,000	----------	----------
AUSTRALASIA	----------	----------	----------			
Australia:						
Queensland	127,000	94,000	228,000	1,635,000	427,000	2,463,000
New South Wales	2,758,000	4,189,000	3,521,000	13,235,000	68,869,000	36,744,000
Victoria	2,864,000	3,680,000	3,126,000	4,065,000	60,366,000	51,162,000
South Australia	2,502,000	2,739,000	2,765,000	3,639,000	35,210,000	43,831,000
Western Australia	1,376,000	1,734,000	1,567,000	2,707,000	18,811,000	16,108,000
Tasmania	24,000	49,000	23,000	396,000	1,025,000	492,000
Total Australia	9,651,000	12,485,000	11,229,000	25,677,000	184,709,000	150,800,000
New Zealand	230,000	329,000	219,000	6,854,000	7,332,000	5,055,000
Total Australasia	9,881,000	12,814,000	11,448,000	32,531,000	192,041,000	155,855,000
Grand total	----------	----------	----------	4,127,685,000	----------	----------

[1] Including native States [2] No official statistics. [3] Data for 1914.

Wheat: Total Production of Countries Named in Preceding Table, 1891-1915.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
1891	2,432,322,000	1898	2,948,305,000	1905	3,327,084,000	1912	3,791,951,000
1892	2,481,805,000	1899	2,783,885,000	1906	3,434,354,000	1913	4,127,437,000
1893	2,559,174,000	1900	2,610,751,000	1907	3,133,965,000	1914	3,585,916,000
1894	2,660,557,000	1901	2,955,975,000	1908	3,182,105,000	1915	4,127,685,000
1895	2,593,812,000	1902	3,090,116,000	1909	3,581,519,000		
1896	2,506,320,000	1903	3,189,813,000	1910	3,575,055,000		
1897	2,236,268,000	1904	3,163,542,000	1911	3,551,795,000		

Winter and Spring Wheat: Acreage, Production, and Farm Value Dec. 1, by States in 1917, and United States Totals, 1890-1917.

State and year.	Winter wheat.					Spring wheat.				
	Acreage.	Average yield per acre.	Production.	Average farm price Dec. 1	Farm value Dec. 1	Average.	Average yield per acre.	Production.	Average farm price Dec. 1	Farm value Dec. 1
	Acres	*Bu*	*Bushels*	*Cts*	*Dollars*	*Acres*	*Bu.*	*Bushels*	*Cts.*	*Dollars*
Me.	------	------	------	------	------	11,000	14.0	154,000	235	362,000
Vt.	------	------	------	------	------	3,000	20.0	60,000	236	142,000
N. Y.	430,000	19.5	8,385,000	210	17,608,000	------	------	------	------	------
N. J.	89,000	19.0	1,691,000	213	3,602,000	------	------	------	------	------
Pa.	1,399,000	17.5	24,482,000	205	50,188,000	------	------	------	------	------
Del.	131,000	16.5	2,162,000	208	4,497,000	------	------	------	------	------
Md.	675,000	17.0	11,475,000	207	23,753,000	------	------	------	------	------
Va.	1,280,000	14.0	17,920,000	216	38,707,000	------	------	------	------	------
W. Va.	315,000	14.0	4,410,000	217	9,570,000	------	------	------	------	------
N. C.	930,000	10.5	9,765,000	234	22,850,000	------	------	------	------	------
S. C.	175,000	10.5	1,838,000	290	5,330,000	------	------	------	------	------
Ga.	244,000	8.5	2,074,000	290	6,015,000	------	------	------	------	------
Ohio	1,870,000	22.0	41,140,000	204	83,926,000	------	------	------	------	------
Ind.	1,805,000	18.5	33,392,000	203	67,786,000	------	------	------	------	------
Ill.	1,600,000	19.0	30,400,000	201	61,104,000	------	------	------	------	------
Mich.	845,000	18.0	15,210,000	204	31,028,000	------	------	------	------	------
Wis.	93,000	24.0	2,232,000	202	4,509,000	146,000	21.2	3,095,000	202	6,252,000
Minn.	80,000	18.0	1,440,000	202	2,909,000	3,230,000	17.5	56,525,000	202	114,180,000
Iowa	170,000	17.5	2,975,000	199	5,920,000	250,000	21.5	5,375,000	199	10,696,000
Mo.	1,800,000	15.3	27,540,000	195	53,703,000	------	------	------	------	------
N. Dak.	------	------	------	------	------	7,000,000	8.0	56,000,000	200	112,000,000
S. Dak.	120,000	14.0	1,680,000	196	3,293,000	3,596,000	14.0	50,344,000	196	98,674,000
Nebr.	597,000	12.0	7,164,000	195	13,970,000	400,000	16.5	6,600,000	195	12,870,000
Kans.	3,713,000	12.3	45,670,000	198	90,427,000	44,000	6.0	264,000	198	523,000
Ky.	750,000	12.0	9,000,000	212	19,080,000	------	------	------	------	------
Tenn.	525,000	9.2	4,830,000	222	10,723,000	------	------	------	------	------
Ala.	93,000	10.0	930,000	270	2,511,000	------	------	------	------	------
Miss.	14,000	15.0	210,000	300	630,000	------	------	------	------	------
Tex.	1,350,000	12.0	16,200,000	210	34,020,000	------	------	------	------	------
Okla.	3,100,000	11.5	35,650,000	194	69,161,000	------	------	------	------	------
Ark.	210,000	16.0	3,360,000	201	6,754,000	------	------	------	------	------
Mont.	605,000	13.0	7,865,000	192	15,101,000	1,122,000	9.0	10,098,000	192	19,388,000
Wyo.	75,000	20.0	1,500,000	200	3,000,000	123,000	22.0	2,706,000	200	5,412,000
Colo.	336,000	23.0	7,728,000	193	14,915,000	264,000	22.0	5,808 000	193	11,209,000
N. Mex.	134,000	10.0	1,340,000	215	2,881,000	69,000	18.0	1,242,000	215	2,670,000
Ariz.	33,000	25.0	825,000	210	1,732,000	------	------	------	------	------
Utah	230,000	14.0	3,220,000	178	5,732,000	90,000	27.0	2,430,000	178	4,325,000
Nev.	4,000	26.0	104,000	180	187,000	37,000	28.0	1,036,000	180	1,865,000

WHEAT—Continued.

Winter and spring wheat: Acreage, production, and farm value Dec. 1, by by states in 1917 and United States totals, 1890-1917—Continued.

State and year.	Winter wheat.					Spring wheat.				
	Acreage.	Average. yield per acre.	Production.	Average farm price Dec. 1	Farm value Dec. 1	Acreage	Average yield per acre.	Production.	Average. farm price Dec. 1	Farm value Dec. 1
	Acres	*Bu*	*Bushels*	*Cts.*	*Dollars*	*Acres*	*Bu.*	*Bushels*	*Cts*	*Dollars*
Idaho	310,000	18.0	5,580,000	182	10,156,000	375,000	22.0	8,250,000	182	15,015,000
Wash.	505,000	21.5	10,858,000	193	20,956,000	1,350,000	13.6	18,360,000	193	35,435,000
Oreg.	420,000	20.0	8,400,000	182	15,288,000	401,000	11.0	4,411,000	182	8,028,000
Cal.	375,000	19.8	7,425,000	200	14,850,000	----------	------	----------	------	----------
U. S.	27,430,000	15.2	418,070,000	202.9	848,372,000	18,511,000	12.6	232,758,000	197.2	459,046,000

Wheat: Yield Per Acre, Price Per Bushel Dec. 1, and value per acre, by States.

State.	Yield per acre (bushels).											Farm price per bushel (cents).						Value per acre (dollars).[1]	
	10-year average, 1908-1917.	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	10-year average, 1908-1917.	1913	1914	1915	1916	1917	5-year average, 1912-1916.	1917
Me.	24.5	23.5	25.5	29.7	21.0	23.5	25.5	27.0	28.0	27.0	14.0	127	101	109	112	187	235	32.25	32.90
Vt.	25.9	23.0	25.0	29.3	27.8	25.0	24.5	29.0	30.0	25.0	20.0	123	100	100	107	165	236	30.27	47.20
N. Y.	20.6	17.5	21.0	23.7	19.5	16.0	20.0	22.5	25.0	21.0	19.5	118	93	108	101	168	210	23.85	40.95
N. J.	18.4	17.3	17.9	18.5	17.4	18.5	17.6	18.0	20.0	20.0	19.0	119	96	109	106	164	213	21.73	40.47
Pa.	17.5	18.5	17.0	17.8	13.5	18.0	17.0	18.1	18.5	19.0	17.5	115	91	104	104	162	205	20.28	35.88
Del.	16.2	15.0	14.0	17.0	16.7	17.5	14.5	20.5	15.0	15.0	16.5	116	88	109	109	162	208	18.51	34.32
Md.	16.3	16.4	14.5	17.4	15.5	15.0	13.3	21.5	16.1	16.0	17.0	116	89	106	105	171	207	18.63	35.19
Va.	12.8	11.4	11.2	12.8	12.0	11.6	13.6	14.5	13.8	12.7	14.0	120	96	108	108	165	216	15.26	30.24
W. Va.	13.6	13.0	13.0	12.5	11.5	14.5	13.0	15.0	15.0	14.5	14.0	121	100	108	108	160	217	16.65	30.38
N. C.	10.6	10.0	9.5	11.4	10.6	8.9	11.7	12.0	10.9	10.5	10.5	131	106	117	120	176	234	13.58	24.57
S. C.	10.6	9.0	10.0	11.0	11.4	9.2	12.3	11.5	10.8	10.6	10.5	154	130	145	138	189	290	15.71	30.45
Ga.	10.6	9.2	10.0	10.5	12.0	9.3	12.2	12.1	11.0	11.4	8.5	149	120	134	129	186	290	15.52	24.65
Ohio	16.4	16.0	15.9	16.2	16.0	8.0	18.0	18.5	20.3	13.5	22.0	116	90	105	104	169	204	17.48	44.88
Ind.	15.4	16.6	15.3	15.6	14.7	8.0	18.5	17.4	17.2	12.0	18.5	114	88	103	102	169	203	15.89	37.56
Ill.	15.6	13.0	17.4	15.0	16.0	8.3	18.7	18.5	19.0	11.0	19.0	112	86	101	100	165	201	15.84	38.19
Mich.	17.4	18.0	18.8	18.0	18.0	10.0	15.3	19.7	21.3	16.6	18.0	115	89	103	101	167	204	18.55	36.72
Wis.	19.3	18.2	19.5	19.3	15.9	19.0	19.3	19.1	22.7	17.6	22.3	109	82	100	95	160	202	20.08	45.05
Minn.	14.0	12.8	16.8	16.0	10.1	15.5	16.2	10.6	17.0	7.6	17.5	108	76	102	90	162	202	12.41	35.35
Iowa	18.7	17.2	17.0	21.0	16.4	19.8	20.6	18.6	20.0	16.3	19.9	105	76	96	87	156	199	18.20	39.60
Mo.	13.7	10.0	14.7	13.8	15.7	12.5	17.1	17.0	12.3	8.5	15.3	110	84	98	98	165	195	13.67	29.84
N. Dak.	11.0	11.6	13.7	5.0	8.0	18.0	10.5	11.2	18.2	5.5	8.0	104	73	101	87	152	200	11.12	16.00
S. Dak.	11.4	12.8	14.1	12.8	4.0	14.2	9.0	9.1	17.1	6.8	14.0	103	71	94	86	150	196	9.93	27.44
Nebr.	17.1	17.2	18.8	16.2	13.4	17.6	17.9	18.6	18.3	19.4	13.8	101	71	95	84	160	195	17.79	26.91
Kans.	13.8	12.6	14.4	14.1	10.7	15.5	13.0	20.5	12.5	12.0	12.2	106	79	95	89	164	198	14.40	24.16
Ky.	12.1	11.6	11.8	12.8	12.7	10.0	13.6	16.5	11.0	9.0	12.0	118	96	103	105	166	212	13.29	25.44
Tenn.	11.1	10.0	10.4	11.7	11.5	10.5	12.0	15.5	10.5	9.5	9.2	121	98	105	108	169	222	13.19	20.42
Ala.	11.2	11.5	10.5	12.0	11.5	10.6	11.7	13.0	12.0	9.5	10.0	140	115	126	125	185	270	14.88	27.00
Miss.	14.0	14.5	11.0	14.0	12.0	12.0	14.0	13.0	20.0	15.0	15.0	134	95	125	105	175	300	17.69	45.00
Tex.	12.8	11.0	9.1	15.0	9.4	15.0	17.5	13.0	15.5	11.0	12.0	119	94	99	107	173	210	15.78	25.20
Okla.	12.3	11.6	12.8	16.3	8.0	12.8	10.0	19.0	11.6	9.7	11.5	107	82	92	89	167	194	12.36	22.31

WHEAT—Continued.

Wheat: Yield per acre, price per bushel Dec. 1 and value per acre by States—Continued.

State.	Yield per acre (bushels).											Farm price per bushel (cents).						Value per acre (dollars).[1]	
	10-year average, 1908-1917.	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	10-year average, 1908-1917.	1913	1914	1915	1916	1917	5-year average, 1912-1916.	1917
Ark.	11.8	10.0	11.4	13.9	10.5	10.0	13.0	13.0	12.5	8.0	16.0	114	90	99	101	163	201	11.93	32.16
Mont.	23.0	24.2	30.8	22.0	28.7	24.1	23.8	20.2	26.5	19.3	10.4	99	66	91	78	161	192	20.25	19.97
Wyo.	25.1	25.4	28.7	25.0	26.0	28.7	25.0	22.9	26.5	21.6	21.2	104	72	89	78	145	200	22.67	42.40
Colo.	22.7	21.0	29.5	22.3	18.9	24.2	21.0	23.8	24.2	19.8	22.6	101	78	87	80	150	193	20.76	43.62
N. Mex.	21.0	25.0	24.5	20.0	22.9	20.9	18.8	24.2	22.2	18.6	12.7	114	97	90	90	150	215	21.34	27.30
Ariz.	27.6	26.7	25.0	22.3	29.6	30.7	32.0	28.0	28.0	29.0	25.0	129	110	125	115	150	210	35.93	52.00
Utah	23.6	26.5	25.9	22.1	22.3	25.7	24.2	25.0	25.7	21.2	17.7	98	73	86	86	152	178	22.55	31.51
Nev.	28.6	30.0	28.7	26.5	28.3	29.2	27.7	29.6	29.6	28.9	27.8	111	82	95	95	140	180	29.72	50.04
Idaho	26.4	28.2	27.8	22.6	30.7	28.6	27.6	26.2	28.0	23.8	20.2	92	63	87	80	146	182	23.24	36.76
Wash.	21.7	18.8	23.2	16.9	22.7	23.5	23.2	23.5	25.7	23.7	15.8	98	73	100	82	143	193	22.28	30.49
Oreg.	21.2	20.8	20.2	22.1	21.0	25.0	21.0	20.8	22.2	23.0	15.6	100	75	102	84	145	182	21.39	28.30
Cal.	16.4	14.6	14.0	18.0	18.0	17.0	14.0	17.0	16.0	16.0	19.8	113	95	104	95	152	200	17.26	39.60
U. S.	14.7	14.0	15.8	13.9	12.5	15.9	15.2	16.6	17.0	12.2	14.2	107.5	79.9	98.6	91.9	160.3	200.9	15.15	28.46

[1] Based upon farm price Dec. 1

OATS.

Oats: Area and Production in Undermentioned Countries, 1915-1917.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
NORTH AMERICA	*Acres*	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
United States	40,996,000	41,527,000	43,572,000	1,549,030,000	1,251,837,000	1,587,286,000
Canada:						
New Brunswick	201,000	198,000	------------	5,560,000	6,039,000	------------
Quebec	1,400,000	1,073,000	------------	42,182,000	24,411,000	------------
Ontario	3,095,000	1,991,000	------------	122,810,000	50,771,000	------------
Manitoba	1,327,000	1,444,000	------------	63,965,000	48,439,000	------------
Saskatchewan	3,201,000	3,792,000	------------	171,765,000	163,278,000	------------
Alberta	1,822,000	2,124,000	------------	102,692,000	102,199,000	------------
Other	379,000	374,000	------------	14,710,000	15,074,000	------------
Total Canada	11,425,000	10,996,000	------------	523,684,000	410,211,000	------------
Mexico	(1)	(1)	(1)	17,000	17,000	------------
Total	------------	------------	------------	2,072,731,000	1,662,065,000	------------
SOUTH AMERICA						
Argentina	2,869,000	2,565,000	2,525,000	49,397,000	75,280,000	31,781,000
Chile	152,000	161,000	(1)	7,104,000	6,350,000	(1)
Uruguay	82,000	105,000	142,000	933,000	2,283,000	1,926,000
Total	------------	------------	------------	57,434,000	83,913,000	------------
EUROPE						
Austria-Hungary:						
Austria	[2]2,663,000	(1)	(1)	[2]57,625,000	(1)	(1)
Hungary proper	2,664,000	(1)	(1)	8,925,000	(1)	(1)
Croatia-Slavoina	(1)	(1)	(1)	5,000,000	(1)	(1)
Bosnia-Herzegovina	(1)	(1)	(1)	4,000,000	(1)	(1)
Total Austria-Hungary	------------	------------	------------	147,550,000	------------	------------

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[2] Galicia and Bukowina not included.
[1] No official statistics.
[4] Data for 1910.
[3] Data for 1914.

OATS—Continued.

Oats: Area and production in undermentioned countries 1915:1917—Continued.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
	Acres	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
Belgium	[2]686,000	(1)	(1)	40,000,000	(1)	(1)
Bulgaria	[3]379,000	(1)	(1)	9,545,000	7,372,000	(1)
Denmark	1,024,000	1,042,000	981,000	42,859,000	42,286,000	37,685,000
Finland	887,000	(1)	(1)	22,000,000	(1)	(1)
France[5]	8,062,000	7,777,000	7,706,000	238,551,000	277,179,000	237,426,000
Germany	11,404,000	(1)	(1)	412,400,000	(1)	(1)
Italy	1,208,000	1,122,000	1,107,000	31,443,000	28,742,000	33,889,000
Netherlands	358,000	343,000	371,000	20,692,000	22,240,000	18,594,000
Norwoy	306,000	297,000	307,000	10,318,000	13,502,000	11,806,000
Roumania	1,065,000	1,068,000	(1)	29,054,000	28,935,000	(1)
Russia:						
Russia proper[5]	33,945,000	34,706,000		757,308,000	843,249,000	
Poland	(1)	(1)	(1)	(1)	(1)	(1)
Northern Caucasia	985,000	(1)	(1)	25,267,000	(1)	(1)
Total	34,930,000			782,575,000		
Serbia	(1)	(1)	(1)	4,000,000	(1)	(1)
Spain	1,403,000	1,398,000	1,425,000	36,949,000	32,163,000	33,048,000
Sweden	1,970,000	1,954,000	1,929,000	91,311,000	93,089,000	70,751,000
United Kingdom:						
England	1,888,000	1,862,000		78,409,000	77,676,000	
Wales	199,000	222,000		7,305,000	8,237,000	
Scotland	983,000	991,000	1,040,000	40,313,000	37,362,000	
Ireland	1,089,000	1,072,000		58,065,000	52,774,000	
Total United Kingdom	4,159,000	4,147,000		184,092,000	176,049,000	
Total				2,103,339,000		
ASIA						
Cyprus	(1)	(1)	(1)	406,000	(1)	(1)
Russia:						
Central Asia (4 Governments of)	986,000	(1)	(1)	16,422,000	(1)	(1)
Siberia (4 Governments of)	5,161,000	(1)	(1)	68,381,000	(1)	(1)
Transcaucasia (1 Government of)	2,000	(1)	(1)	36,000	(1)	(1)
Total	6,149,000			84,839,000		
Total				85,244,000		
AFRICA						
Algeria	590,000	536,000	682,000	15,082,000	13,140,000	18,601,000
Tunis	148,000	164,000	124,000	3,445,000	2,067,000	3,996,000
Union of South Africa	(1)	(1)	250,000	[2]9,661,000	(1)	6,928,000
Total				28,188,000		
AUSTRALASIA						
Australia:						
Queensland	3,000	(3)		44,000	2,000	
New South Wales	43,000	58,000		512,000	1,344,000	
Victoria	435,000	354,000		1,608,000	9,329,000	
South Australia	141,000	127,000		368,000	2,134,000	
Western Australia	96,000	104,000		465,000	1,538,000	
Tasmania	57,000	78,000		1,342,000	2,189,000	
Total Australia	775,000	722,000	724,000	4,341,000	16,539,000	20,751,000
New Zealand	288,000	213,000	178,000	11,436,000	7,653,000	5,470,000
Total Australasia	1,063,000	935,000	902,000	15,777,000	24,192,000	26,221,000
Grand total				4,362,713,000		

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[5] Excludes territory occupied by the enemy.
[2] Census of 1911.
[1] No official statistics.
[3] Less than 500 acres.

OATS—Continued.

Oats: Total Production in Countries Named in Preceding Table, 1895-1915.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
1895	3,008,154,000	1901	2,862,615,000	1907	3,603,896,000	1913	4,697,437,000
1896	2,847,115,000	1902	3,626,303,000	1908	3,591,012,000	1914	4,034,857,000
1897	2,633,971,000	1903	3,378,034,000	1909	4,312,882,000	1915	4,362,713,000
1898	2,903,974,000	1904	3,611,302,000	1910	4,182,410,000		
1899	3,256,256,000	1905	3,510,167,000	1911	3,808,561,000		
1900	3,166,002,000	1906	3,544,961,000	1912	4,617,394,000		

Oats: Acreage, Production, and Total Farm Value, by States, 1916 and 1917.

State.	Thousands of acres		Production (thousands of bushels).		Total value, basis Dec. 1 price (thousands of dollars).	
	1917	1916	1917	1916	1917	1916
Maine	170	160	4,930	5,760	4,190	3,859
New Hampshire	14	12	532	444	447	306
Vermont	88	80	3,168	2,560	2,693	1,664
Massachusetts	12	11	444	352	360	232
Rhode Island	2	2	62	54	46	37
Connecticut	20	17	660	510	521	352
New York	1,275	1,206	44,625	31,356	33,469	19,441
New Jersey	73	69	2,482	2,070	1,737	1,263
Pennsylvania	1,175	1,130	41,125	35,030	30,021	19,967
Delaware	4	4	128	120	100	74
Maryland	47	46	1,457	1,357	1,093	828
Virginia	225	250	5,512	5,875	4,630	3,701
West Virginia	143	140	3,861	3,220	3,050	2,061
North Carolina	340	390	5,780	6,825	5,375	5,050
South Carlina	400	500	6,000	9,000	6,000	7,200
Gergia	650	860	10,400	16,770	12,168	13,248
Florida	55	60	770	960	755	639
Ohio	1,775	1,717	78,100	48,076	49,984	25,480
Indiana	1,820	1,750	76,440	52,500	48,157	26,775
Illinois	4,700	4,470	244,400	172,095	158,860	87,708
Michigan	1,550	1,423	56,575	42,690	36,208	22,626
Wisconsin	2,250	2,200	99,000	81,400	65,340	41,514
Minnesota	3,250	3,325	120,250	88,112	75,758	41,413
Iowa	5,250	5,100	246,750	188,700	155,452	90,576
Missouri	1,480	1,290	59,200	32,250	36,112	17,092
North Dakota	2,575	2,500	38,625	53,750	23,948	23,650
South Dakota	1,925	1,850	65,450	56,425	39,924	25,956
Nebraska	3,038	2,250	115,444	79,875	70,421	37,541
Kansas	2,284	1,550	70,804	36,425	45,315	20,034
Kentucky	310	300	8,060	6,300	6,126	3,780
Tennessee	350	260	7,350	5,460	6,100	3,385
Alabama	540	600	9,720	10,500	9,914	7,875
Mississippi	300	350	5,700	6,300	5,358	4,662
Louisiana	84	110	1,873	2,090	1,761	1,421
Texas	1,425	1,500	37,050	42,750	30,381	26,078
Oklahoma	1,150	1,160	26,450	14,500	19,838	8,265
Arkansas	340	350	9,520	7,350	7,140	4,998
Montana	680	660	13,600	25,080	11,016	11,788
Wyoming	263	250	9,468	8,750	7,574	5,250
Colorado	293	290	11,134	9,570	8,462	5.742

OATS—Continued.

Oats: Acreage, production and total farm value, by States, 1916-17—Continued.

State.	Thousands of acres.		Production (thousands of bushels).		Total value, basis Dec. 1 price (thousands of dollars).	
	1917	1916	1917	1916	1917	1916
New Mexico	45	64	1,350	1,856	1,134	1,244
Arizona	10	9	400	338	384	270
Utah	100	103	4,400	4,480	3,740	2,733
Nevada	14	14	560	602	538	452
Idaho	275	310	10,450	13,330	8,046	7,198
Washington	292	275	11,242	14,300	9,106	7,293
Oregon	365	360	9,125	17,280	6,844	8,467
California	196	200	6,860	6,500	5,831	4,680
United States	43,572	41,527	1,587,286	1,251,837	1,061,427	655,928

BARLEY.

Barley: Area and Production in Undermentioned Countries, 1915-1917.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
EUROPE	*Acres*	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
Austria-Hungary:						
Austria	[1]1,578,000	(2)	(2)	[1]29,733,000	(2)	(2)
Hungary proper	2,830,000	(2)	(2)	56,186,000	(2)	(2)
Croatia-Slavonia	(2)	(2)	(2)	1,938,000	(2)	(2)
Bosnia-Herzegovina	(2)	(2)	(2)	3,000,000	(2)	(2)
Total Austria-Hungary				90,857,000		
Belgium	[3]84,000	(2)	(2)	4,000,000	(2)	(2)
Bulgaria	[3]554,000	(2)	(2)	14,697,000	14,739,000	
Denmark	644,000	633,000	594,000	25,890,000	22,317,000	17,866,000
Finland	[4]273,000	(2)	(2)	5,000,000	(2)	(2)
France[5]	1,575,000	1,538,000	1,789,000	31,787,000	38,268,000	39,557,000
Germany	4,002,000	(2)	(2)	114,077,000	(2)	(2)
Italy	608,000	596,000	469,000	11,051,000	11,041,000	7,422,000
Netherlands	63,000	60,000	52,000	3,380,000	2,498,000	2,573,000
Norway	97,000	98,000	97,000	2,682,000	3,415,000	3,000,000
Roumania	1,371,000	1,454,000		28,688,000	30,038,000	
Russia:						
Russia proper[5]	22,325,000	22,031,000		316,904,000	350,223,000	
Poland	(2)	(2)	(2)	(2)	(2)	
Northern Caucasia	4,400,000	(2)	(2)	75,328,000	(2)	
Total Russia (European)	26,725,000			392,232,000		
Serbia	(2)	(2)	(2)	2,250,000	(2)	(2)
Spain	3,786,000	3,886,000	4,086,000	82,763,000	86,863,000	76,747,000
Sweden	431,000	421,000	438,000	14,254,000	14,621,000	12,263,000

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[1] No official statistics.

[2] Galicia and Bukowina not included.

[3] Data for 1914.

[4] Data for 1910.

[5] Excludes territory occupied by the enemy.

BALREY—Continued

Barley: Area and production in undermentioned countries, 1915-1917—Continued.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
United Kingdom:	*Acres*	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
England	1,152,000	1,245,000	----------	34,898,000	40,023,000	----------
Wales	80,000	87,000	----------	2,467,000	2,731,000	----------
Scotland	149,000	170,000	159,414	5,183,000	5,340,000	----------
Ireland	142,000	150,000	----------	5,828,000	6,474,000	----------
Total United Kingdom	1,523,000	1,652,000	----------	48,376,000	54,568,000	----------
Total	----------	----------	----------	871,984,000	----------	----------
ASIA						
British India	7,821,000	7,924,000	7,856,000	142,847,000	147,653,000	155,447,000
Cyprus	(1)	(1)	(1)	2,000,000	(1)	(1)
Japanese Empire:						
Japan	3,213,000	3,079,000	2,738,000	94,959,000	89,486,000	76,505,000
Formosa	5,000	(1)	(1)	61,000	(1)	(1)
Chosen[6]	1,185,000	(1)	(1)	24,872,000	(1)	(1)
Total Japanese Empire	4,403,000	----------	----------	119,892,000	----------	----------
Russia:						
Central Asia (4 Governments of)	350,000	(1)	(1)	3,278,000	(1)	(1)
Siberia (4 Governments of)	651,000	(1)	(1)	5,753,000	(1)	----------
Transcaucasia (1 Government of)	2,000	(1)	(1)	38,000	(1)	----------
Total	1,003,000	----------	----------	9,069,000	----------	----------
Total	----------	----------	----------	273,808,000	----------	----------
AFRICA						
Algeria	2,703,000	3,009,000	2,839,000	39,866,000	35,969,000	31,461,000
Egypt	463,000	439,000	445,000	13,746,000	13,161,000	13,598,000
Tunis	1,038,000	1,233,000	1,038,000	11,482,000	4,914,000	8,267,000
Union of South Africa	(1)	64,000	57,000	[2]1,359,000	(1)	1,000,000
Total	----------	----------	----------	66,453,000	----------	54,326,000
AUSTRALASIA						
Australia:						
Queensland	7,000	1,000	----------	106,000	8,000	----------
New South Wales	5,000	6,000	----------	47,000	115,000	----------
Victoria	62,000	61,000	----------	601,000	1,735,000	----------
South Australia	66,000	85,000	----------	447,000	1,698,000	----------
Western Australia	7,000	10,000	----------	24,000	131,000	----------
Tasmania	6,000	5,000	----------	105,000	116,000	----------
Total Australia	154,000	170,000	180,000	1,329,000	3,802,000	4,189,000
New Zealand	18,000	30,000	30,000	597,000	820,000	738,000
Total Australasia	172,000	200,000	210,000	1,926,000	4,622,000	4,927,000
Grand total	----------	----------	----------	1,522,732,000	----------	----------

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[6] Data for 1914.

[1] No official statistics.

[2] Census of 1911.

BARLEY—Continued.

Barley: Total Production of Countries Named in Preceding Table, 1895-1915.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
	Bushels		*Bushels*		*Bushels*		*Bushels*
1895	915,504,000	1901	1,072,195,000	1907	1,271,237,000	1913	1,650,265,000
1896	932,100,000	1902	1,229,132,000	1908	1,274,897,000	1914	1,463,289,000
1897	864,605,000	1903	1,235,786,000	1909	1,458,263,000	1915	1,522,732,000
1898	1,030,581,000	1904	1,175,784,000	1910	1,388,734,000		
1899	965,720,000	1905	1,180,053,000	1911	1,373,286,000		
1900	939,622,000	1906	1,296,579,000	1912	1,466,977,000		

Barley: Acreage, Production, and Total Farm Value, by States, 1917.

[000 omitted.]

State.	Acreage.	Farm Value Dec. 1.	Production.	State.	Acreage.	Production.	Farm Value Dec. 1.
	Acres	*Bushels*	*Dollars*		*Acres*	*Bushels*	*Dollars*
Maine	7	147	191	Kansas	750	7,500	8,625
New Hampshire	1	31	54	Kentucky	5	140	161
Vermont	17	493	690	Tennessee	6	120	173
New York	110	3,080	4,004	Texas	9	180	247
Pennsylvania	13	364	510	Oklahoma	9	162	240
Maryland	6	156	203	Montana	90	1,350	1,390
Virginia	12	360	500	Wyoming	27	783	1,018
Ohio	40	1,320	1,558	Colorado	168	5,544	5,766
Indiana	22	671	698	New Mexioc	13	364	506
Illinois	66	2,475	2,995	Arizona	33	1,155	1,732
Michigan	130	3,445	4,100	Utah	33	1,221	1,465
Wisconsin	600	19,200	23,808	Nevada	12	420	500
Minnesota	1,400	37,800	41,958	Idaho	190	5,510	5,786
Iowa	300	10,500	12,285	Washington	170	4,930	5,670
				Oregon	182	5,278	6,070
Missouri	6	150	141	California	1,350	39,150	46,980
North Dakota	1,825	22,812	22,812				
South Dakota	1,020	26,520	29,172				
Nebraska	213	5,644	5,531	United States	8,835	208,975	237,539

RYE.

Rye: Area and Production in Undermentioned Countries, 1915-1917.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
NORTH AMERICA	*Acres*	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
United States	3,129,000	3,213,000	4,102,000	54,050,000	48,862,000	60,145,000
Canada:						
Quebec	9,000	8,000		145,000	118,000	
Ontario	78,000	69,000		1,551,000	1,208,000	
Manitoba	6,000	30,000		155,000	557,000	
Saskatchewan	3,000	23,000		76,000	548,000	
Alberta	17,000	18,000		463,000	440,000	
Other	(1)	(1)		4,000	5,000	
Total Canada	112,000	148,000		2,394,000	2,876,000	

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(1) Less than 500 acres.

RYE—Continued.

Rye: Area and production in undermentioned countries, 1915-1917—Continued.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
	Acres	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
Mexico	(2)	(2)	(2)	70,000	70,000	70,000
Total	----------	----------	----------	56,514,000	51,808,000	----------
SOUTH AMERICA						
Argentina	229,000	212,000	180,000	1,811,000	2,008,000	858,000
Chile	4,000	11,000	(2)	185,000	187,000	----------
Uruguay	(1)	(1)	(1)	1,000	1,000	1,000
Total	----------	----------	----------	1,997,000	2,196,000	----------
EUROPE						
Austria-Hungary:						
Austria	[6]3,120,000	(2)	(2)	[6]51,211,000	(2)	(2)
Hungary	2,625,000	(2)	(2)	45,975,000	(2)	(2)
Croatia-Slavonia	(2)	(2)	(2)	2,500,000	(2)	(2)
Bosnia-Herzegovina	(2)	(2)	(2)	600,000	(2)	(2)
Total Austria-Hungary	----------	----------	----------	100,286,000	----------	----------
Belgium	[1]645,000	(2)	(2)	18,000,000	(2)	(2)
Bulgaria	[1]527,000	(2)	(2)	7,622,000	8,490,000	----------
Denmark	521,000	481,000	436,000	13,001,000	10,569,000	8,858,000
Finland	[3]592,000	(2)	(2)	10,000,000	(2)	(2)
France[4]	2,309,000	2,149,000	2,002,000	33,148,000	33,351,000	27,509,000
Germany	15,843,000	(3)	(2)	360,310,000	(2)	(2)
Italy	294,000	290,000	279,000	4,362,000	5,582,000	4,460,000
Netherlands	546,000	499,000	463,000	13,726,000	12,391,000	11,958,000
Norway	48,000	48,000	48,000	829,000	943,000	656,000
Roumania	187,000	200,000	----------	2,911,000	(2)	(2)
Russia:						
Russia proper[4]	59,766,000	55,637,000	----------	875,422,000	843,740,000	----------
Poland	(2)	(2)	(2)	(2)	(2)	(2)
Northern Caucasia	328,000	(2)	(2)	4,615,000	(2)	(2)
Total	60,094,000	----------	----------	880,037,000	----------	----------
Serbia	(2)	(2)	(2)	800,000	(2)	(2)
Spain	1,820,000	1,846,000	1,800,000	26,102,000	28,782,000	24,365,000
Sweden	965,000	913,000	813,000	23,133,000	22,929,000	15,747,000
United Kingdom	62,000	60,000	64,000	1,700,000	(2)	----------
Total	----------	----------	----------	1,495,967,000	----------	----------
ASIA						
Russia:						
Central Asia (4 Governments of)	340,000	(3)	(2)	2,785,000	(2)	(2)
Siberia (4 Governments of)	2,452,000	(2)	(2)	20,143,000	(2)	(2)
Transcaucasia (1 Government of)	1,000	(2)	(2)	17,000	(2)	(2)
Total Russia (Asiatic)	2,793,000	----------	----------	22,945,000	----------	----------
AUSTRALASIA						
Australia:						
Queensland	(5)	(5)	----------	1,000	1,000	----------
New South Wales	3,000	3,000	----------	36,000	32,000	----------
Victoria	2,000	3,000	----------	13,000	43,000	----------
South Australia	1,000	3,000	----------	6,000	31,000	----------
Western Australia	1,000	1,000	----------	3,000	4,000	----------
Tasmania	1,000	1,000	----------	9,000	17,000	----------
Total Australia	8,000	11,000	10,000	67,000	127,000	134,000
Grand total	----------	----------	----------	1,577,490,000	----------	----------

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[1] Data for 1914.

[2] No official statistics.

[3] Census of 1910.

[4] Excludes territory occupied by the enemy.

[5] Less than 500 acres.

[6] Galicia and Bukowina not included.

RYE—Continued.

Rye: Total Production of Countries Named in Preceding Table, 1895-1915.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
	Bushels		*Bushels*		*Bushels*		*Bushels*
1895	1,468,212,000	1901	1,416,022,000	1907	1,538,778,000	1913	1,880,387,000
1896	1,499,250,000	1902	1,647,845,000	1908	1,590,057,000	1914	1,596,882,000
1897	1,300,645,000	1903	1,659,961,000	1909	1,747,123,000	1915	1,577,490,000
1898	1,461,171,000	1904	1,742,112,000	1910	1,673,473,000		
1899	1,583,179,000	1905	1,495,751,000	1911	1,753,933,000		
1900	1,557,634,000	1906	1,433,395,000	1912	1,886,517,000		

Rye: Acreage, Production, and Total Farm Value, by States, 1917.

[000 omitted.]

State.	Acreage.	Production.	Farm Value Dec. 1.	State.	Acreage.	Production.	Farm Value Dec. 1.
	Acres	*Bushels*	*Dollars*		*Acres*	*Bushels*	*Dollars*
Vermont	1	20	35	Missouri	30	441	728
Massachusetts	3	57	114	North Dakota	1,040	9,880	16,203
Connecticut	7	144	302	South Dakota	350	5,600	8,680
New York	135	2,565	4,720	Nebraska	215	3,354	5,199
New Jersey	69	1,276	2,233	Kansas	76	1,140	1,904
Pennsylvania	260	4,420	7,514	Kentucky	30	375	656
Delaware	1	16	28	Tennessee	12	120	234
Maryland	24	384	645	Alabama	4	38	102
Virginia	77	1,155	2,021	Texas	2	20	39
West Virginia	20	270	456	Oklahoma	9	90	153
North Carolina	52	520	1,040	Arkansas	2	27	40
South Carolina	17	170	484	Montana	9	114	188
Georgia	15	128	346	Wyoming	18	252	391
Ohio	90	1,620	2,608	Colorado	27	432	631
Indiana	200	3,000	4,800	Utah	13	104	166
Illinois	43	752	1,241	Idaho	2	31	42
Michigan	341	5,115	8,440	Washington	7	89	156
Wisconsin	410	7,585	12,819	Oregon	31	356	605
Minnesota	410	7,585	12,667				
Iowa	50	900	1,395	United States	4,102	60,145	100,025

POTATOES.

Potatoes: Area and Production of Undermentioned Countries, 1914-1916.

Country.	Area.			Production.		
	1914	1915	1916	1914	1915	1916
NORTH AMERICA	*Acres*	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
United States	3,711,000	3,734,000	3,565,000	409,921,000	359,721,000	286,953,000
Canada:						
Prince Edward Isl.	32,000	31,000	31,000	6,806,000	3,558,000	6,386,000
Nova Scotia	32,000	34,000	34,000	7,165,000	4,759,000	6,935,000
New Brunswick	44,000	40,000	39,000	10,534,000	5,772,000	7,488,000
Quebec	115,000	117,000	112,000	21,811,000	17,510,000	14,672,000
Ontario	154,000	155,000	133,000	25,772,000	14,362,000	8,113,000
Manitoba	27,000	28,000	32,000	3,104,000	3,104,000	4,709,000
Saskatchewan	31,000	30,000	47,000	4,085,000	4,428,000	7,319,000
Alberta	26,000	27,000	29,000	3,652,000	5,155,000	4,783,000
British Columbia	15,000	16,000	15,000	2,675,000	3,956,000	2,892,000
Total Canada	476,000	479,000	473,000	85,672,000	62,604,000	63,297,000

POTATOES—Continued

Potatoes: Area and production of undermentioned countries, 1914-1916—Continued.

Country.	Area.			Production.		
	1914	1915	1916	1914	1915	1916
	Acres	*Acres*	*Acres*	*Bushels*	*Bushels*	*Bushels*
Mexico	(1)	(1)	(1)	[1]924,000	(1)	(1)
Newfoundland	(1)	(1)	(1)	[1]1,524,000	(1)	(1)
Total	------------	------------	------------	498,041,000	------------	------------
SOUTH AMERICA						
Argentina	293,000	306,000	322,000	28,366,000	29,597,000	31,138,000
Chile	81,000	78,000	79,000	9,169,000	9,546,000	11,598,000
Total	------------	------------	------------	37,535,000	39,143,000	42,736,000
EUROPE						
Austria-Hungary:						
Austria	[4]1,774,000	[4]1,757,000	(1)	[4]285,070,000	[4]232,203,000	(1)
Hungary proper	1,513,000	1,577,000	(1)	195,266,000	209,356,000	(1)
Croatia-Slavonia	[5]194,000	(1)	(1)	[5]21,140,000	(1)	(1)
Bosnia-Herzegovina	[5]67,000	(1)	(1)	[6]2,998,000	(1)	(1)
Total Austria-Hungary	3,548,000	------------	------------	504,474,000	------------	------------
Belgium	411,000	(1)	(1)	[5]117,613,000	(1)	(1)
Bulgaria	[2]8,000	(1)	(1)	[3]503,000	(1)	(1)
Denmark	[1]151,000	165,000	159,000	37,331,000	42,349,000	26,629,000
Finland	[6]181,000	(1)	(1)	18,736,000	(1)	(1)
France	3,676,000	3,223,000	3,222,000	440,652,000	332,788,000	335,507,000
Germany	8,367,000	8,827,000	(1)	1,674,377,000	1,983,161,000	882,000,000
Italy	727,000	725,000	729,000	61,104,000	56,768,000	54,277,000
Luxemburg	(1)	(1)	(1)	5,288,000	(1)	(1)
Malta	4,000	3,000	(1)	1,080,000	568,000	(1)
Netherlands	424,000	438,000	413,000	120,780 000	126,741,000	88,490,000
Norway	104,000	113,000	114,000	27,542,000	19,957,000	29,189,000
Roumania[7]	26,000	28,000	35,000	2,654,000	3,765,000	(1)
Do[8]	56,000	52,000	(1)	1,083,000	865,000	(1)
Russia, European:						
Russia proper	8,652,000	6,815,000	5,879,000	891,579,000	770,709,000	662,169,000
Poland	(1)	(1)	(1)	(1)	(1)	(1)
Northern Caucasia	204,000	165,000	------------	17,907,000	15,796,000	------------
Total European Russia, excluding Poland	8,856,000	6,980,000	------------	909,486,000	786,505,000	------------
Serbia	[3]31,000	(1)	(1)	[3]2,173,000	(1)	(1)
Spain	688,000	(1)	(1)	76,657,000	(1)	(1)
Sweden	375,000	382,000	373,000	63,209,000	78,806,000	54,972,000
Switzerland	137,000	159,000	200,000	22,046,000	38,672,000	18,000,000
United Kingdom:						
England	436,000	437,000	400,000	104,804,000	100,881,000	88,484,000
Scotland	152,000	144,000	130,000	40,230,000	36,291,000	19,825,000
Wales	25,000	26,000	28,000	5,445,000	5,821,000	5,018,000
Ireland	583,000	594,000	586,000	128,642,00	138,509,000	90,845,000
Total United Kingdom	1,196,000	1,201,000	1,144,000	279,121,000	281,502,000	204,172,000
Total	------------	------------	------------	4,365,909,000	------------	------------
ASIA						
Japan	205,000	225,000	231,000	32,312,000	35,103,000	39,006,000

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[1] No official statistics.
[2] Data for 1906.
[3] Data for 1912.
[4] Galicia and Bukowina not included.
[5] Data for 1913.
[6] Data for 1910.
[7] Grown alone.
[8] Grown with corn.

POTATOES—Continued.

Potatoes: Area and Production of undermentioned countries, 1914:1916—Continued.

Country.	Area.			Production.		
	1914	1915	1916	1915	1916	1917
Russia, Asiatic:						
Central Asia (4 governments of)	*Acres* 104,000	*Acres* 106,000	*Acres* (1)	*Bushels* 7,560,000	*Bushels* 7,974,000	*Bushels* ------------
Siberia (4 governments of)	441,000	296,000	(1)	47,075,000	24,307,000	------------
Transcaucasia (1 government of)	2,000	2,000	(1)	90,000	100,000	------------
Total Asiatic Russia	547,000	404,000	------------	54,725,000	32,381,000	------------
Total	------------	------------	------------	87,037,000	67,484,000	------------
AFRICA						
Algeria	[2]48,000	(1)	(1)	[2]2,119,000	(1)	(1)
Union of South Africa	[3]62,000	------------	------------	[3]3,685,000	(1)	(1)
Total	------------	------------	------------	5,804,000	------------	------------
AUSTRALASIA						
Australia:						
Queensland	10,000	8,000	6,000	618,000	598,000	278,000
New South Wales	39,000	30,000	20,000	3,989,000	1,520,000	1,658,000
Victoria	75,000	65,000	57,000	6,593,000	7,064,000	6,489,000
South Australia	11,000	8,000	4,000	1,230,000	673,000	485,000
Western Australia	5,000	5,000	5,000	665,000	550,000	527,000
Tasmania	31,000	32,000	29,000	3,001,000	2,946,000	2,983,000
Total Australia	171,000	148,000	121,000	16,096,000	13,351,000	12,421,000
New Zealand	29,000	22,000	30,000	5,869,000	4,952,000	4,809,000
Total Australasia	200,000	170,000	151,000	21,965,000	18,303,000	17,230,000
Grand total	------------	------------	------------	5,016,291,000	------------	------------

[1] No official statistics. [2] Data for 1913. [3] Census of 1911.

Potatoes: Total Production of Countries Mentioned in Preceding Table, 1900-1914.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
	Bushels		*Bushels*		*Bushels*		*Bushels*
1900	4,382,031,000	1904	4,298,049,000	1908	5,295,043,000	1912	5,872,953,000
1901	4,669,958,000	1905	5,254,598,000	1909	5,595,567,000	1913	5,802,910,000
1902	4,674,000,000	1906	4,789,112,000	1910	5,242,278,000	1914	5,016,291,000
1903	4,409,793,000	1907	5,122,078,000	1911	4,842,109,000		

POTATOES—Continued.

Potatoes: Acreage, Production, and Total Farm Value, by States, 1917.

[000 omitted.]

State.	Acreage.	Production.	Farm Value Dec. 1.	State.	Acreage.	Production.	Farm Value Dec. 1.
	Acres	*Bushels*	*Dollars*		*Acres*	*Bushels*	*Dollars*
Maine	150	20,250	26,325	North Dakota	90	3,870	5,031
New Hampshire	21	2,247	3,752	South Dakota	80	7,200	7,992
Vermont	30	3,000	4,200	Nebraska	147	12,495	13,370
Massachusetts	38	4,370	7,648	Kansas	78	4,446	6,758
Rhode Island	5	675	1,181	Kentucky	70	6,720	9,408
Connecticut	29	3,190	5,232	Tennessee	52	4,888	5.373
New York	400	38,000	49,400	Alabama	41	2,952	5,373
New Jersey	98	11,172	15,753	Mississippi	14	1,092	1,835
Pennsylvania *	321	29,532	39,868	Louisiana	25	1,600	2,944
Delaware	13	1,235	1,606	Texas	46	2.760	5,796
Maryland	60	6,000	7,140	Oklahoma	36	2,484	4,471
Virginia	200	19,800	24,750	Arkansas	30	2,400	3,768
West Virginia	65	7,475	9,867	Montana	57	5,415	5,523
North Carolina	50	4,500	6,435	Wyoming	30	4,650	4,836
South Carolina	15	1,440	3,024	Colorado	70	9,310	8,472
Georgia	19	1,596	3,112	New Mexico	11	1,276	2,105
Florida	25	2,275	4,664	Arizona	4	420	630
Ohio	160	16,000	22,880	Utah	23	4,347	3,391
Indiana	92	8,464	11,765	Nevada	15	3,105	3,726
Illinois	150	13,500	20,520	Idaho	39	6,084	4,806
Michigan	378	35,910	37,706	Washington	79	9,875	9,085
Wisconsin	367	34,998	31,498	Oregon	75	8,100	6,480
Minnesota	300	33,600	30,576	California	105	15,225	22,838
Iowa	138	13,110	17,174				
Missouri	109	9,483	12,992	United States	4,390	442,536	543,865

Potatoes: Yield Per Acre, Price Per Bushel Dec. 1, and Value Per Acre, by States.

State.	Yield per acre (bushels)											Farm price per bushel (cents).						Value per acre (dollars)[1]	
	10-year average, 1908-1917	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	10-year average, 1908-1917	1913	1914	1915	1916	1917	5-year average, 1912-1916	1917
Me.	205	225	225	220	180	198	220	260	179	204	135	71	53	33	70	142	130	145.26	175.50
N. H.	125	100	130	150	125	140	122	159	95	120	107	91	83	60	95	166	167	114.30	178.69
Vt.	122	73	155	130	105	140	127	168	108	112	100	77	72	47	81	139	140	98.11	140.00
Mass.	115	95	125	125	93	130	105	155	120	91	115	100	85	71	94	175	175	113.77	201.25
R. I.	125	150	125	136	110	113	130	165	110	74	135	103	90	70	92	185	175	111.52	236.25
Conn.	105	80	120	125	85	107	92	140	95	95	110	101	87	65	96	175	164	102.39	180.40
N. Y.	93	82	120	102	74	106	74	145	62	70	95	82	80	44	82	158	130	69.18	123.50
N. J.	102	72	90	105	73	108	95	108	130	122	114	92	82	61	75	155	141	100.33	160.74
Pa.	83	72	78	88	56	109	88	105	72	76	92	84	80	58	75	118	135	70.21	124.20
Del.	89	82	96	103	60	100	87	80	95	90	95	86	75	70	75	125	130	75.00	123.50
Md.	87	77	80	95	45	112	87	78	97	95	100	78	67	60	62	133	119	71.31	119.00
Va.	92	88	92	98	45	87	94	65	125	130	99	84	80	77	61	137	125	87.23	123.75
W. Va.	89	84	98	92	45	112	83	57	117	88	115	91	96	81	65	158	132	80.59	151.80
N. C.	78	79	74	89	48	85	80	52	90	95	90	94	82	92	73	140	143	75.35	128.70
S. C.	82	81	85	90	70	90	80	70	80	75	96	132	130	125	115	175	210	103.11	201.60

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[1] Based upon farm price Dec. 1.

POTATOES—Continued.

Potatoes: Yield per acre, price per bushel Dec. 1, and value per acre by states.

State	Yield per acre (bushels).											Farm price per bushel (cents)						Value per acre (dollars).[1]	
	10-year average, 1908-1917	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	10-year average, 1908-1917	1913	1914	1915	1916	1917	5-year average, 1912-1916	1917
Ga.	74	78	81	82	72	78	81	60	65	60	84	119	105	105	99	175	195	77.05	163.80
Fla.	85	83	95	90	90	93	76	80	80	74	91	136	117	113	115	200	205	104.32	186.55
Ohio	82	77	93	82	65	112	64	95	82	45	100	85	85	53	70	182	143	60.68	143.00
Ind.	77	57	95	84	58	114	53	80	95	44	92	84	84	56	56	177	139	55.48	127.88
Ill.	75	71	91	75	70	101	46	60	110	58	90	89	89	61	59	179	152	61.37	136.80
Mich.	90	72	105	105	94	105	96	121	59	48	95	64	53	30	56	160	105	48.01	99.75
Wis.	99	80	102	95	116	120	109	124	87	47	114	60	54	30	45	147	90	49.02	102.60
Minn.	100	76	115	61	115	135	110	114	106	60	112	58	52	32	39	130	91	50.16	101.92
Iowa	80	80	89	72	74	109	48	86	105	42	95	80	82	59	54	175	131	54.09	124.45
Mo.	69	80	85	86	27	84	38	45	98	60	87	92	93	73	60	180	137	58.59	119.19
N. Dak.	90	85	110	41	120	128	85	109	90	93	43	66	56	42	41	115	130	54.61	55.90
S. Dak.	83	90	80	44	72	105	78	90	115	66	90	70	63	47	35	137	111	51.98	99.90
Nebr.	74	78	78	60	52	80	48	80	105	73	85	77	78	54	42	150	107	55.01	90.95
Kans.	63	80	79	57	22	82	40	62	83	71	57	99	91	77	74	165	152	64.51	86.64
Ky.	79	62	92	92	39	101	49	45	126	84	96	90	102	84	55	142	140	68.81	134.40
Tenn.	74	80	75	80	41	88	64	43	88	82	94	91	97	91	63	149	126	68.09	118.44
Ala.	81	85	80	80	78	81	84	79	80	90	72	114	105	101	90	169	182	93.00	131.04
Miss.	83	91	87	85	83	89	80	80	90	65	78	109	100	95	84	160	168	83.14	131.04
La.	67	82	75	55	69	73	70	70	51	65	64	110	96	97	95	167	184	70.54	117.76
Tex.	58	71	50	51	57	63	52	61	65	50	60	127	112	104	105	190	210	70.22	126.00
Okla.	62	78	70	60	18	60	60	70	85	53	69	116	105	90	84	195	180	71.31	124.20
Ark.	73	82	70	84	55	70	72	60	90	65	80	109	100	97	76	190	157	77.30	125.60
Mont.	141	138	180	120	150	165	140	140	175	125	95	72	67	64	50	120	102	95.38	96.90
Wyo.	128	158	160	100	42	140	140	108	150	130	155	84	65	70	60	128	104	101.40	161.20
Colo.	116	125	160	100	35	95	115	120	135	138	133	71	65	50	55	135	91	86.85	121.03
N. Mex.	90	100	85	47	80	100	68	100	100	102	116	113	140	95	95	175	165	105.74	191.40
Ariz.	101	110	90	92	95	125	75	110	95	115	105	134	135	120	100	180	150	138.30	157.50
Utah	162	160	180	142	140	185	180	140	125	180	189	68	58	60	63	130	78	118.36	147.42
Nev.	165	120	180	150	160	178	160	130	172	190	207	85	68	70	70	130	120	134.80	248.40
Idaho	179	130	200	142	180	185	170	155	125	150	156	63	50	48	56	127	79	94.71	123.24
Wash.	142	120	170	131	160	167	123	128	135	165	125	65	60	55	53	98	92	87.51	115.00
Oreg.	125	99	160	105	130	155	135	97	115	150	108	64	58	60	60	90	80	77.71	86.40
Cal.	130	107	130	130	135	130	119	138	130	141	145	90	70	70	75	140	150	111.86	217.50
U. S.	95.9	85.7	106.8	93.8	80.9	113.4	90.4	110.5	96.3	80.5	100.8	76.0	68.7	48.7	61.7	146.1	122.9	70.05	123.89

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[1] Based upon farm price Dec. 1.

SWEET POTATOES.

Sweet Potatoes: Acreage, Production, and Total Farm Value, by States, 1917.

[000 omitted.]

State.	Acreage.	Production.	Farm Value Dec. 1.	State.	Acreage.	Production.	Farm Value Dec. 1.
	Acres	*Bushels*	*Dollars*		*Acres*	*Bushels*	*Dollars*
New Jersey	24	2,880	4,608	Missouri	8	896	1,263
Pennsylvania	1	110	154	Kansas	4	368	589
Delaware	5	560	672	Kentucky	12	1,140	1,425
Maryland	10	1,180	1,180	Tennessee	30	2,850	2,992
Virginia	40	4,160	4,576	Alabama	178	16,020	14,738
West Virginia	2	280	392	Mississippi	85	5,525	5,359
North Carolina	90	8,550	8,978	Louisiana	62	4,898	5,094
South Carolina	80	7,600	7,904	Texas	84	6,552	9,173
Georgia	125	11,625	12,206	Oklahoma	15	1,350	2,160
Florida	35	3,500	4,025	Arkansas	40	4,400	4,224
Ohio	1	95	166	New Mexico	2	236	484
Indiana	3	318	525	California	6	1,002	1,503
Illinois	8	776	1,164				
Iowa	3	270	567	United States	973	87,141	96,121

HAY.

Hay: Acreage, Production, and Total Farm Value, by States, 1917.

[000 omitted.]

State.	Acreage.	Production.	Farm Value Dec. 1.	State.	Acreage.	Production.	Farm Value Dec. 1.
	Acres	*Bushels*	*Dollars*		*Acres*	*Bushels*	*Dollars*
Maine	1,160	1,566	17,383	North Dakota	550	484	5,566
New Hampshire	506	683	8,196	South Dakota	735	1,102	11,681
Vermont	945	1,531	17,606	Nebraska	1,590	2,544	38,669
Massachusetts	460	690	13,731	Kansas	1,478	2,217	36,802
Rhode Island	60	90	1,827	Kentucky	975	1,268	25,740
Connecticut	350	525	10,238	Tennessee	892	1,142	22,041
New York	4,185	6,110	92,261	Alabama	178	16,020	14,738
New Jersey	350	508	10,160	Mississippi	261	371	5,676
Pennsylvania	3,092	4,329	75,758	Louisiana	260	416	5,949
Delaware	78	98	2,009	Texas	450	450	9,000
Maryland	442	552	10,985	Oklahoma	575	920	14,168
Virginia	850	986	21,002	Arkansas	390	573	8,824
West Virginia	790	1,003	21,163	Montana	759	1,063	19,772
North Carolina	440	528	10,402	Wyoming	560	952	16,184
South Carolina	250	280	5,768	Colorado	970	2,376	39,442
Georgia	535	562	11,240	New Mexico	202	384	8,064
Florida	100	110	2,002	Arizona	157	550	13,640
Ohio	2,925	4,154	78,926	Utah	392	1.137	17,055
Indiana	2,146	3,004	56,175	Nevada	234	679	10,796
Illinois	2,750	3,438	68,760	Idaho	725	2,175	34,800
Michigan	2,558	3,837	65,996	Washington	808	1,778	35,560
Wisconsin	2,703	4,595	79,494	Oregon	840	1,638	28,665
Minnesota	1,850	2,868	34,703	California	2,400	4,560	87,552
Iowa	3,160	3,887	65.302				
Missouri	3,180	3,657	63,998	United States	53,516	79,528	1,359,491

APPLES.

Apples: Production and Prices, Dec. 1, by States, 1911-1917.

State.	Production (bushels, 000 omitted).							Farm price per bushel (cents).						
	1911	1912	1913	1914	1915	1916	1917	1911	1912	1913	1914	1915	1916	1917
Maine	6,800	5,400	3,000	7,100	2,160	5,040	4,617	55	50	100	53	89	75	95
New Hampshire	1,600	2,200	800	2,000	1,058	1,596	1,035	79	55	113	53	90	90	120
Vermont	2,250	2,600	700	3,200	972	3,312	1,286	78	79	123	57	94	90	130
Massachusetts	3,000	3,300	2,300	4,400	2,655	3,450	2,186	89	76	134	65	90	99	155
Rhode Island	400	300	300	400	176	261	198	62	82	116	65	108	107	150
Connecticut	2,400	1,700	2,100	2,500	1,534	1,830	1,316	70	75	94	65	97	100	144
New York	39,000	44,000	19,500	49,000	25,585	37,800	14,059	59	50	95	45	78	75	132
New Jersey	3,100	1,700	2,100	3,400	2,331	2,250	2,041	60	72	85	55	80	100	125
Pennsylvania	20,500	12,700	10,200	23,100	15,254	18,621	12,150	54	70	80	50	71	80	126
Delaware	300	420	180	500	366	249	450	85	82	117	58	70	100	110
Maryland	2,600	2,650	1,300	3,500	2,400	2,400	2,525	52	60	100	41	63	80	97
Virginia	7,200	15,000	5,200	15,300	13,176	13,299	9,974	74	60	86	46	63	78	101
West Virginia	,7800	10,300	1,000	12,400	7,540	10,032	5,994	71	55	130	49	64	76	122
North Carolina	3,600	7,600	3,000	9,000	5,916	7,074	6,156	88	75	95	49	75	80	114
South Carolina	470	600	260	800	663	588	818	126	100	145	85	117	125	155
Georgia	800	1,400	900	2,000	1,875	1,623	1,754	118	101	108	80	90	117	120
Ohio	18,700	10,600	4,800	13,300	17,952	8,601	6,336	54	67	110	63	55	100	150
Indiana	8,900	4,200	6,600	4,300	11,648	3,921	5,915	68	84	88	70	53	120	121
Illinois	10,600	5,800	8,200	3,700	14,148	4,848	7,500	68	79	94	84	47	115	110
Michigan	12,300	17,200	8,900	17,200	9,450	12,480	5,160	70	50	82	49	74	87	140
Wisconsin	3,000	2,000	4,000	2,200	4,418	2,634	3,029	93	88	95	90	75	110	134
Minnesota	1,300	700	1,800	700	1,235	1,266	1,445	102	98	105	90	102	145	155
Iowa	9,500	1,500	7,100	1,600	9,660	4,725	5,775	81	101	112	97	70	145	145
Missouri	11,600	19,200	7,900	12,500	18,860	8,100	12,375	70	53	93	71	51	107	106
South Dakota	240	200	320	200	301	348	349	114	104	145	117	115	150	170
Nebraska	3,600	2,800	2,300	1,200	3,800	1,701	2,400	83	88	108	96	66	140	140
Kansas	2,400	6,700	2,700	3,100	6,375	2,550	3,375	100	71	110	95	76	130	135
Kentucky	6,100	9,600	6,900	9,000	12,510	6,441	9,125	92	85	92	78	69	113	117
Tennessee	2,900	8,900	3,900	8,600	6,076	4,900	5,000	104	81	106	75	81	107	122
Alabama	700	1,200	900	1,600	1,596	1,140	1,453	130	100	115	94	95	140	140
Mississippi	240	450	370	500	424	225	315	122	106	112	95	105	120	145
Texas	200	500	300	500	562	450	345	128	115	130	108	100	135	156
Oklahoma	1,050	1,700	1,100	1,500	2,340	627	1,300	120	92	122	90	94	145	130
Arkansas	3,000	5,100	4,000	5,000	3,550	1,838	2,683	115	92	102	83	70	100	135
Montana	900	900	840	900	1,040	768	911	115	103	142	76	70	110	100
Wyoming	20	30	30	-------	-------	-------	-------	--	----	170	128	115	180	----
Colorado	2,700	3,100	3,300	4,500	2,080	2,112	2,640	122	80	108	70	70	94	80
New Mexico	680	750	650	900	820	357	657	119	120	128	98	87	160	150
Arizona	110	130	90	100	120	138	135	195	204	217	186	170	182	205
Utah	460	680	610	800	427	75	650	110	89	96	63	95	160	80
Nevada	100	260	160	200	120	45	192	151	124	132	125	135	175	160
Idaho	1,200	1,650	1,400	1,700	1,720	400	1,995	112	85	98	78	85	114	95
Washington	3,500	7,700	6,900	8,300	7,300	14,858	17,897	118	70	93	64	80	80	125
Oregon	1,500	4,100	3,500	3,600	3,128	3,855	3,500	111	69	85	81	75	85	105
California	4,700	5,700	3,000	6,000	4,600	5,754	5,592	92	90	117	76	85	98	115
United States	214,020	235,220	145,410	253,200	230,011	204,582	174,608	72.1	66.3	98.1	59.4	69.0	91.2	122

PEACHES.

Peaches: Production, and Prices Sept. 15, by States, 1911-1917.

State.	Production (bushels, 000 omitted).							Farm price per bushel (cents).						
	1911	1912	1913	1914	1915	1916	1917	1911	1912	1913	1914	1915	1916	1917
New Hampshire	-----	-----	44	3	58	24	47	-----	-----	190	-----	150	200	185
Massachusetts	97	51	105	31	152	66	145	275	220	180	180	130	226	200
Rhode Island	22	16	29	14	29	14	20	-----	-----	175	170	103	148	180
Connecticut	249	128	263	142	335	134	268	200	221	147	175	96	190	170
New York	1,536	1,400	1,742	530	2,106	1,238	2,244	142	160	140	160	90	140	140
New Jersey	440	638	483	1,140	1,275	689	871	175	135	150	98	70	160	170
Pennsylvania	1,096	660	922	1,541	2,044	1,069	1,440	180	186	180	125	80	150	170
Delaware	249	521	312	608	842	346	647	-----	150	125	95	39	150	125
Maryland	492	672	480	1,032	1,248	600	975	138	140	105	98	35	150	120
Virginia	318	1,058	312	911	1,358	600	800	138	96	150	140	80	128	160
West Virginia	230	788	132	886	1,164	520	608	174	112	210	105	75	150	175
North Carolina	437	2,093	598	1,863	1,955	897	1,541	124	93	120	95	90	138	125
South Carolina	649	1,020	405	1,166	864	545	1,130	128	105	125	110	100	105	120
Georgia	2,145	6,175	1,950	5,785	5,330	3,510	4,716	140	101	130	100	100	155	160
Florida	126	190	112	188	177	119	122	150	100	-----	100	75	200	-----
Ohio	1,735	1,055	931	1,653	2,448	1,350	496	140	144	200	140	97	155	215
Indiana	1,147	185	1,276	1,128	648	888	592	118	169	130	110	120	135	210
Illinois	2,310	82	1,998	1,755	874	780	364	84	146	115	105	110	150	195
Michigan	2,228	700	1,539	1,247	2,360	2,010	744	111	165	150	140	97	124	200
Iowa	240	24	632	472	112	64	30	152	133	135	135	150	200	220
Missouri	2,700	900	4,320	3,780	3,300	1,050	890	98	107	93	90	85	105	135
Nebraska	36	240	210	192	120	30	0	125	156	150	150	140	225	235
Kansas	871	2,016	875	1,760	2,442	150	121	124	100	150	120	100	180	195
Kentucky	770	1,210	1,430	1,980	1,320	880	1,034	109	94	90	75	95	110	150
Tennessee	360	2,820	1,140	2,640	2,460	900	900	125	77	110	78	80	95	120
Alabama	840	2,760	1,140	2,310	2,640	1,110	1,830	100	100	100	100	90	100	145
Mississippi	460	1,800	1,020	1,440	1,540	400	375	121	96	98	85	83	88	120
Louisiana	190	693	460	376	456	587	478	83	150	110	100	88	75	150
Texas	1,204	4,140	2,107	1,196	4,081	2,860	2,352	148	97	120	140	87	100	170
Oklahoma	656	2,121	860	220	2,408	230	1,150	128	68	120	130	57	120	135
Arkansas	2,346	4,524	3,120	3,180	5,940	750	840	107	78	90	87	63	87	125
Colorado	363	1,035	360	1,025	650	405	1,200	175	100	124	60	125	125	200
New Mexico	86	84	52	106	154	40	60	85	137	150	130	65	170	195
Arizona	51	54	57	60	60	56	60	225	215	200	175	-----	200	195
Utah	208	323	284	380	212	84	900	183	106	115	71	95	125	130
Nevada	10	10	8	9	7	1	6	-----	-----	-----	-----	120	-----	-----
Idaho	81	112	92	120	162	25	165	154	134	120	100	70	165	120
Washington	320	445	446	486	566	415	504	106	76	110	96	80	96	100
Oregon	190	292	311	387	432	276	250	174	133	130	110	84	100	110
California	7,412	9,308	7,150	10,387	9,768	11,733	14,151	111	94	182	80	55	80	100
United States	34,880	52,343	39,707	54,109	64,097	37,505	45,066	122.1	102.0	131.6	97.7	80.0	113.0	135.9

PEARS.

Pears: Production, and Prices Nov. 15, 1911-1917.

State.	Production (bushels, 000 omitted).							Farm price per bushel (cents).						
	1911	1912	1913	1914	1915	1916	1917	1911	1912	1913	1914	1915	1916	1917
Maine	42	38	32	40	30	36	24	----	----	125	----	----	----	----
New Hampshire	21	19	24	22	18	25	19	125	75	----	----	----	----	----
Vermont	25	20	20	17	17	24	14	----	75	100	----	----	120	----
Massachusetts	114	71	121	98	75	114	71	120	88	----	105	----	120	----
Rhode Island	14	11	16	13	10	14	7	----	150	----	----	85	100	----
Connecticut	46	32	55	43	36	46	29	108	138	250	----	----	----	----
New York	1,886	1,128	2,016	1,298	1,375	1,675	1,708	55	80	79	85	105	100	140
New Jersey	976	749	598	876	596	687	590	38	54	65	50	59	68	75
Pennsylvania	646	418	456	608	494	509	448	70	85	100	70	74	90	120
Delaware	262	315	77	210	228	164	294	100	40	----	38	50	----	65
Maryland	455	616	224	560	483	378	525	----	95	----	25	----	50	70
Virginia	122	282	68	234	261	122	194	110	73	151	73	68	100	115
West Virginia	49	70	11	72	63	42	33	120	80	130	94	100	120	135
North Carolina	72	207	58	187	150	75	150	125	89	122	85	80	100	125
South Carolina	52	117	42	109	91	56	100	100	92	110	94	95	85	125
Georgia	111	212	178	208	203	135	140	100	93	140	94	95	100	135
Florida	88	73	58	112	104	54	46	78	62	----	----	----	----	100
Ohio	736	624	400	544	560	376	334	60	65	110	70	65	100	125
Indiana	585	448	474	422	410	351	416	72	70	70	69	70	95	100
Illinois	499	448	422	422	496	354	456	85	70	88	90	70	100	95
Michigan	829	540	707	840	550	1,007	1,080	60	75	92	58	72	65	121
Wisconsin	18	13	22	22	23	26	----	125	90	----	99	----	----	----
Iowa	57	60	102	84	106	63	82	110	105	120	120	81	130	145
Missouri	148	332	184	283	294	164	265	115	85	120	85	80	105	125
Nebraska	10	15	13	14	18	10	14	175	111	170	147	120	----	175
Kansas	70	142	63	109	133	106	140	157	100	160	110	110	160	170
Kentucky	160	326	160	308	264	160	204	125	91	100	85	78	100	125
Tennessee	32	196	79	152	195	59	75	140	99	120	100	80	110	170
Alabama	48	172	90	132	168	90	80	125	100	120	98	95	95	150
Mississippi	40	154	106	142	160	50	30	150	100	100	100	80	90	105
Louisiana	24	52	48	52	55	48	52	100	100	130	83	75	----	115
Texas	147	296	187	266	301	322	280	134	110	113	85	105	105	160
Oklahoma	33	54	23	28	68	11	45	175	120	160	125	110	160	150
Arkansas	47	113	55	98	135	68	102	100	105	120	100	89	115	125
Montana	11	12	10	12	12	6	11	183	----	165	----	125	----	----
Colorado	160	193	130	206	99	99	320	155	93	175	----	----	----	210
New Mexico	43	52	46	60	64	36	46	125	----	140	----	160	----	----
Arizona	16	20	17	20	22	18	21	----	142	215	190	----	----	----
Utah	51	52	42	56	31	12	48	88	110	130	100	135	----	120
Nevada	2	8	6	7	4	2	6	----	----	----	----	----	----	----
Idaho	65	81	71	66	75	50	70	173	100	150	135	130	----	150
Washington	372	477	464	536	564	551	595	100	80	99	65	103	95	115
Oregon	441	454	559	540	525	555	600	88	80	110	100	96	120	130
California	1,848	2,015	1,634	1,958	1,650	3,124	3,523	65	78	70	96	115	95	100
United States	11,490	11,843	10,108	12,086	11,216	11,874	13,281	74.6	80.2	92.7	78.5	89.7	93.3	115.8

HORSES AND MULES.

Horses and Mules: Number and Value on Farms in the United States, 1867-1918.

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of numbers are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available. It should also be observed that the census of 1910, giving numbers as of April 15, is not strictly comparable with former censuses, which related to numbers June 1.

Jan. 1—	Horses.			Mules.		
	Number.	Price per head Jan. 1.	Farm value Jan. 1.	Number.	Price per head Jan. 1.	Farm value Jan. 1.
1867	5,401,000	$59.05	$318,924.000	822,000	$66.94	$55,048,000
1868	5,757,000	54.27	312,416,000	856,000	56.04	47,954,000
1869	6,333,000	62.57	396,222,000	922,000	79.23	73,027,000
1870	8,249,000	67.43	556,251,000	1,180,000	90.42	106,654,000
1870, census, June 1	*7,345,370*			*1,125,415*		
1871	8,702,000	71.14	619,039,000	1,242,000	91.98	114,272,000
1872	8,991,000	67.41	606,111,000	1,276,000	87.14	111,222,000
1873	9,222,000	66.39	612,273,000	1,310,000	85.15	111,546,000
1874	9,334,000	65.16	608,073,000	1,339,000	81.35	108,953,000
1875	9,504,000	61.10	580,708,000	1,394,000	71.89	100,197,000
1876	9,735,000	57.29	557,747,000	1,414,000	66.46	94,001,000
1877	10,155,000	55.83	567,017,000	1,444,000	64.07	92,482,000
1878	10,330,000	56.63	584,999,000	1,638,000	62.03	101,579,000
1879	10,939,000	52.36	572,712,000	1,713,000	56.00	95,942,000
1880	11,202,000	54.75	613,297,000	1,730,000	61.26	105,948,000
1880, census, June 1	*10,357,488*			*1,812,808*		
1881	11,430,000	58.44	667,954,000	1,721,000	69.79	120,096,000
1882	10,522,000	58.53	615,825,000	7,835,000	71.35	130.945,000
1883	10,838,000	70.59	765,041,000	1,871,000	79.49	148,732,000
1884	11,170,000	74.64	833,734,000	1,914,000	84.22	161,215,000
1885	11,565,000	73.70	852,283,000	1,973,000	82.38	162,497,000
1886	12,078,000	71.27	860,823,000	2,053,000	79.60	163,381,000
1887	12,497,000	72.15	904,686,000	2,117,000	78.91	167,058,000
1888	13,173,000	71.82	946,096,000	2,192,000	79.78	174,854,000
1889	13,663,000	71.89	982,195,000	2,258,000	79.49	179,444,000
1890	14,214,000	68.84	978,517,000	2,331,000	78.25	182,394,000
1890, census, June 1	*14,969,467*			*2,295,532*		
1891	14,057,000	67.00	941,823,000	2,297,000	77.88	178,847,000
1892	15,498,000	65.01	1,007,594,000	2,315,000	75.55	174,882,000
1893	16,207,000	61.22	992,225,000	2,331,000	70.68	164,764,000
1894	16,081,000	47.83	769,225,000	2,352,000	62.17	146,233,000
1895	15,893,000	36.29	576,731,000	2,333,000	47.55	110,928,000
1896	15,124,000	33.07	500,140,000	2,279,000	45.29	103,204,000
1897	14,365,000	31.51	452,649,000	2,216,000	41.66	92,302,000
1898	13,961,000	34.26	478,362,000	2,190,000	43.88	96,110,000
1899	13,665,000	37.40	511,075,000	2,134,000	44.96	95,963,000
1900	13,538,000	44.61	603,969,000	2,086,000	53.55	111,717,000
1900, census, June 1	*18,267,020*			*3,264,615*		
1901[1]	16,745,000	52.86	885,200,000	2,864,000	63.97	183,232,000
1902	16,531,000	58.61	968,935,000	2,757,000	67.61	186,412,000
1903	16,557,000	62.25	1,030,706,000	2,728,000	72.49	197,753,000
1904	16,736,000	67.93	1,136,940,000	2,758,000	78.88	217,533,000
1905	17,058,000	70.37	1,200,310,000	2,889,000	87.18	251,840,000
1906	18,719,000	80.72	1,510,890,000	3,404,000	98.31	334,681,000
1907	19,747,000	93.51	1,846,578,000	3,817,000	112.16	428,064,000
1908	19,992,000	93.41	1,867,530,000	3,869,000	107.76	416,939,000
1909	20,640,000	95.64	1,974,052,000	4,053,000	107.84	437,082,000
1910	21,040,000			4,123,000		
1910, census, April 15	*19,833,113*	108.03	2,142,524,000	*4,209,769*	120.20	506,049,000

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[1] Estimates of numbers revised, based on census data.

HORSES AND MULES—Continued.

Horses and Mules: Number and value on farms in the United States, 1867-1918. | Continued.

Jan. 1—	Horses.			Mules.		
	Number.	Price per head Jan. 1.	Farm value Jan. 1.	Number.	Price per head Jan. 1.	Farm value Jan. 1.
1911[1]	20,277,000	111.46	2,259,981,000	4,323,000	125.92	544,359,000
1912	20,509,000	105.94	2,172,694,000	4,362,000	120.51	525,657,000
1913	20,567,000	110.77	2,278,222,000	4,386,000	124.31	545,245,000
1914	20,962,000	109.32	2,291,638,000	4,449,000	123.85	551,017,000
1915	21,195,000	103.33	2,190,102,000	4,479,000	112.36	503,271,000
1916	21,159,000	101.60	2,149,786,000	4,593,000	113.83	522,834,000
1917	21,210,000	102.89	2,182,307,000	4,723,000	118.15	558,006,000
1918	21,563,000	104.28	2,248,626,000	4,824,000	128.74	621,064,000

[1] Estimates of numbers revised, based on census data.

Horses and Mules: Number and Value on Farms Jan. 1, 1917 and 1918, by States.

State.	Horses.						Mules.					
	Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1—		Number (thousands Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1—	
	1918	1917	1918	1917	1918	1917	1918	1917	1918	1917	1918	1917
Me.	109	109	$163.00	$152.00	$17,767	$16,568	------	------	--------	--------	--------	-------
N. H.	45	44	151.00	135.00	6,795	5,940	------	------	--------	--------	--------	-------
Vt.	89	89	144.00	134.00	12,816	11,926	------	------	--------	--------	--------	-------
Mass.	57	59	163.00	156.00	9,291	9,204	------	------	--------	--------	--------	-------
R. I.	8	8	155.00	155.00	1,240	1,240	------	------	--------	--------	--------	-------
Conn.	45	46	161.00	147.00	7,245	6,762	------	------	--------	--------	--------	-------
N. Y.	597	609	145.00	139.00	86,565	84,651	5	5	$159.00	$155.00	$795	$775
N. J.	90	92	153.00	149.00	13,770	13,708	4	4	174.00	169.00	696	676
Pa.	590	596	126.00	126.00	74,340	75,096	48	48	138.00	137.00	6,624	6,576
Del.	36	36	87.00	90.00	3,132	3,240	6	6	115.00	116.00	690	696
Md.	171	169	102.00	105.00	17,442	17,745	25	25	124.00	127.00	3,100	3,175
Va.	365	361	104.00	100.00	37,960	36,100	65	64	128.00	122.00	8,320	7,808
W. Va	196	196	106.00	107.00	20,776	20,972	12	12	116.00	117.00	1,392	1,404
N. C.	187	185	140.00	125.00	26,180	23,125	207	205	167.00	150.00	34,569	30,750
S. C.	85	85	156.00	136.00	13,260	11,560	179	174	192.00	162.00	34,368	28,188
Ga.	130	127	145.00	129.00	18,850	16,383	334	324	181.00	163.00	60,454	52,812
Fla.	62	60	127.00	120.00	7,874	7,200	33	31	172.00	166.00	5,676	5,146
Ohio	883	892	112.00	119.00	98,896	106,148	26	26	118.00	120.00	3,068	3,120
Ind.	837	845	105.00	108.00	87,885	91,260	95	95	119.00	114.00	11,305	10,830
Ill.	1,467	1,452	103.00	106.00	151,101	153,912	150	150	120.00	115.00	18,000	17,250
Mich.	680	680	118.00	121.00	80,240	82,280	4	4	119.00	122.00	476	488
Wis.	708	715	117.00	120.00	82,836	85,800	3	3	117.00	117.00	351	351
Minn.	944	925	105.00	109.00	99,120	100,825	6	6	111.00	110.00	666	660
Iowa	1,583	1,552	104.00	107.00	164,632	166,064	69	68	116.00	116.00	8,004	7,888
Mo.	1,040	1,020	97.00	92.00	100,880	93,840	367	360	113.00	104.00	41,471	37,440
N. Dak	842	825	102.00	106.00	85,884	87,450	9	9	121.00	122.00	1,089	1,098
S. Dak	811	780	95.00	93.00	77,045	72,540	16	15	109.00	108.00	1,744	1,620
Nebr.	1,049	1,018	101.00	95.00	105,949	96,710	118	112	113.00	106.00	13,334	11,872
Kans.	1,049	1,018	101.00	95.00	105,949	96,710	280	275	118.00	108.00	33,040	29,700
Ky.	443	434	101.00	93.00	44,743	40,362	224	224	122.00	112.00	27,328	25,088

HORSES AND MULES—Continued.

Horses and Mules: Number and value on farms Jan. 1, 1917 and 1918, by States—Continued.

State.	Horses.						Mules.					
	Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value thousands of dollars) Jan. 1		Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1	
	1918	1917	1918	1917	1918	1917	1918	1917	1918	1917	1918	1917
Tenn..	350	350	109.00	105.00	38,150	36,750	273	270	131.00	120.00	35,763	32,400
Ala....	153	150	116.00	99.00	17,748	14,850	289	278	141.00	118.00	40,749	32,804
Miss...	253	243	100.00	87.00	25,300	21,141	307	292	124.00	109.00	38,068	31.828
La.....	207	195	93.00	86.00	19,251	16,770	156	139	135.00	125.00	21,060	17,375
Tex....	1,212	1,200	77.00	78.00	93,324	93,600	808	800	107.00	103.00	86,456	82,400
Okla..	737	730	94.00	86.00	69,278	62,780	276	276	114.00	104.00	31,464	28,704
Ark....	275	270	97.00	87.00	26,675	23,490	263	255	125.00	114.00	32,875	29,070
Mont..	209	195	82.00	80.00	17,138	15,600	5	5	105.00	107.00	525	535
Wyo...	506	460	98.00	92.00	49.588	42,320	4	4	104.00	97.00	416	388
Colo...	399	380	97.00	93.00	38,703	35,340	26	24	108.00	104.00	2,808	2,496
N.Mex	272	250	62.00	62.00	16,864	15,500	19	19	89.00	89.00	1,691	1,691
Ariz....	135	129	71.00	75.00	9,585	9,675	9	8	108.00	104.00	972	832
Utah..	145	138	89.00	87.00	12,905	12,006	2	2	82.00	79.00	164	158
Nev....	75	73	77.00	76.00	5,775	5,548	3	3	80.00	85.00	240	255
Idaho.	258	250	99.00	93.00	25,542	23,250	4	4	105.00	100.00	420	400
Wash.	309	300	108.00	98.00	33,372	29,400	19	19	117.00	111.00	2,223	2,109
Oreg...	309	300	98.00	98.00	30,282	29,400	10	10	102.00	103.00	1,020	1,030
Cal.....	468	468	98.00	97.00	45,864	45,396	66	70	115.00	116.00	7,590	8,120
U. S	21,563	21,210	104.28	102.89	2,248,626	2,182,307	4,824	4,723	128.74	118.15	621,064	558,006

Number of Horses and Mules Received at Principal Live-Stock Markets, 1900-1917.

[From reports of stock yards companies.]

Year and month.	Horses.		Horses and mules.						Total, 8 cities.
	Chicago.	St. Paul.	Denver.	Fort Worth.	Kansas City.	Omaha.	St. Joseph.	St. Louis National Stock Yards, Ill.	
1900	99,010	26,778	22,691	---------	103,308	59,645	13,497	144,921	469,850
1901	109,353	15,123	16,545	---------	96,657	36,391	22,521	128,880	425,470
1902	102,100	8,162	24,428	4,872	76,844	42,079	19,909	109,295	387,689
1903	100,603	7,823	19,040	10,094	67,274	52,829	20,483	128,615	406,761
1904	105,949	6,438	13,437	17,895	67,562	46,845	28,704	181,341	468,171
1905	127,250	5,561	16,046	18,033	65,582	45,422	31,565	178,257	487,716
1906	126,979	9,299	16,571	21,303	69,629	42,269	28,480	166,393	480,923
1907	102,055	14,557	11,059	18,507	62,341	44,020	26,894	117,379	396,812
1908	92,138	7,125	11,158	12,435	56,335	39,998	22,875	109,393	351,457
1909	91,411	5,632	15,348	20,732	67,796	31,711	23,132	122,471	378,233
1910	83,439	5,482	15,554	34,445	69,628	29,734	27,583	130,271	396,136
1911	104,545	7,709	18,022	37,361	84,861	31,771	42,023	170,379	496,671
1912	92,977	5,314	14,918	49,025	73,445	32,520	38,661	163,973	470,833
1913	90,615	5,203	16,274	56,724	82,110	31,580	32,418	156,825	471,749
1914	106,282	5,683	16,957	47,712	87,155	30,688	25,424	148,128	468,029
1915	165,253	10,091	71,870	53,640	102,153	41,679	41,254	270,612	756,552

HORSES AND MULES—Continued.

Number of horses and mules received at principal live-stock markets, 1900-1917—Continued.

Year and month.	Horses.		Horses and mules.						
	Chicago.	St. Paul.	Denver.	Fort Worth.	Kansas City.	Omaha.	St. Joseph.	St. Louis National Stock Yards, Ill.	Total, 8 cities.
1916									
January	12,986	377	7,912	4,915	7,886	1,443	2,456	25,809	63,784
February	15,913	1,010	6,101	3,132	4,735	2,135	2,313	20,114	55,453
March	17,469	1,131	3,546	4,980	5,012	2,952	1,515	17,599	54,204
April	14,882	1,092	2,679	3,518	7,073	1,695	1,682	14,881	47,592
May	18,240	821	4,704	6,466	8,171	3,036	2,143	20,695	64,276
June	17,557	1,571	4,517	4,073	7,156	2,338	2,124	15,785	55,121
July	18,990	1,510	4,872	12,967	11,027	2,177	1,934	26,574	80,051
August	23,896	1,003	3,476	7,261	13,414	3,152	1,660	23,292	77,154
September	21,132	1,195	5,444	4,590	13,349	3,332	2,599	26,655	78,296
October	18,952	835	5,299	11,686	17,145	2,042	3,920	31,147	91,026
November	14,342	910	1,441	8,351	13,093	1,731	2,892	22,244	65,004
December	11,090	322	2,809	7,270	15,080	1,453	1,968	22,023	62,015
Total, 1916	205,449	11,777	52,800	79,209	123,141	27,486	27,206	266,818	793,886
1917									
January	10,738	496	2,095	7,322	15,144	1,724	2,625	24,957	65,151
February	6,413	544	1,701	2,763	14,402	2,108	1,978	15,068	44,977
March	11,111	895	1,143	4,203	14,235	3,229	2,958	16,874	54,648
April	7,601	598	1,154	4,420	13,263	2,641	1,862	13,370	44,909
May	7,550	465	1,755	1,742	5,379	1,235	733	8,198	27,057
June	7,258	476	2,137	3,793	2,578	1,044	462	6,852	24,600
July	8,361	553	1,305	9,156	4,171	1,889	821	15,659	41,915
August	4,628	405	849	9,312	3,776	1,424	1,301	13,963	35,658
September	7,274	1,261	1,035	14,523	10,313	5,465	3,438	31,267	74,576
October	11,329	1,158	2,551	30,647	13,966	6,341	5,908	51,291	123,161
November	15,823	1,704	2,014	18,332	17,861	3,892	6,367	47,743	113,736
December	9,175	1,404	2,019	9,020	12,765	1,789	5,131	34,595	75,898
Total, 1917	107,311	9,959	19,758	115,233	127,823	32,781	33,584	279,837	726,286

CATTLE.

Cattle: Number and Value on Farms in the United States, 1867-1918.

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of numbers are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available. It should also be observed that the census of 1910, giving numbers as of April 15, is not strictly comparable with former censuses, which related to numbers June 1.

Jan. 1	Milch cows.			Other cattle.		
	Number.	Price per head Jan. 1.	Farm value Jan. 1.	Number.	Price per head Jan. 1.	Farm value Jan. 1.
1867	8,349,000	$28.74	$239,947,000	11,731,000	$15.79	$185,254,000
1868	8,692,000	26.56	230,817,000	11,942,000	15.06	179,888,000
1869	9,248,000	29.15	269,610,000	12,185,000	18.73	228,183,000
1870	10,096,000	32.70	330,175,000	15,388,000	18.87	290,401,000
1870, census, June 1.	*8,935,332*			*13,566,005*		

CATTLE—Continued.

Cattle: Number and value on farms in the United States, 1867-1918.—Continued.

Jan. 1—	Milch cows.			Other cattle.		
	Number.	Price per head Jan. 1.	Farm value Jan. 1.	Number	Price per head Jan. 1—	Farm value Jan. 1.
1871	10,023,000	33.89	339,701,000	16,212,000	20.78	336,860,000
1872	10,304,000	29.45	303,438,000	16,390,000	18.12	296,932,000
1873	10,576,000	26.72	282,559,000	16,414,000	18.06	296,448,000
1874	10,705,000	25.63	274,326,000	16,218,000	17.55	284,706,000
1875	10,907,000	25.74	280,701,000	16,313,000	16.91	275,872,000
1876	11,085,000	25.61	283,879,000	16,785,000	17.00	285,387,000
1877	11,261,000	25.47	286,778,000	17,956,000	15.09	287,156,000
1878	11,300,000	25.74	290,898,000	19,223,000	16.72	321,346,000
1879	11,826,000	21.71	256,721,000	21,408,000	15.38	329,254,000
1880	12,027,000	23.27	279,899,000	21,231,000	16.10	341,761,000
1880, census, June 1	*12,443,120*			*22,488,550*		
1881	12,369,000	23.95	296,277,000	20,939,000	17.33	362,862,000
1882	12,612,000	25.89	326,489,000	23,280,000	19.89	463,070,000
1883	13,126,000	30.21	396,575,000	28,046,000	21.81	611,549,000
1884	13,501,000	31.37	423,487,000	29,046,000	23.52	683,229,000
1885	13,905,000	29.70	412,903,000	29,867,000	23.25	694,383,000
1886	14,235,000	27.40	389,986,000	31,275,000	21.17	661,956,000
1887	14,522,000	26.08	378,790,000	33,512,000	19.79	663,138,000
1888	14,856,000	24.65	366,252,000	34,378,000	17.79	611,751,000
1889	15,299,000	23.94	366,226,000	35,032,000	17.05	597,237,000
1890	15,953,000	22.14	353,152,000	36,849,000	15.21	560,625,000
1890, census, June 1	*16,511,950*			*33,734,128*		
1891	16,020,000	21.62	346,398,000	36,876,000	14.76	544,128,000
1892	16,416,000	21.40	351,378,000	37,651,000	15.16	570,749,000
1893	16,424,000	21.75	357,300,000	35,954,000	15.24	547,882,000
1894	16,487,000	21.77	358,999,000	36,608,000	14.66	536,790,000
1895	16,505,000	21.97	362,602,000	34,364,000	14.06	482,999,000
1896	16,138,000	22.55	363,956,000	32,085,000	15.86	508,928,000
1897	15,942,000	23.16	369,240,000	30,508,000	16.65	507,929,000
1898	15,841,000	27.45	434,814,000	29,264,000	20.92	612,297,000
1899	15,990,000	29.66	474,234,000	27,994,000	22.79	637,931,000
1900	16,292,000	31.60	514,812,000	27,610,000	24.97	689,486,000
1900, census, June 1	*17,135,633*			*50,585,777*		
1901[1]	16,834,000	30.00	505,093,000	45,500,000	19.93	906,644,000
1902	16,697,000	29.23	488,130,000	44,728,000	18.76	839,126,000
1903	17,105,000	30.21	516,712,000	44,659,000	18.45	824,055,000
1904	17,420,000	29.21	508,841,000	43,629.000	16.32	712.178,000
1905	17,572,000	27.44	482,272,000	43,669,000	15.15	661,571,000
1906	19,794,000	29.44	582,789,000	47,068,000	15.85	746,172,000
1907	20,968,000	31.00	645,497,000	51,566,000	17.15	81,557,000
1908	21,194,000	30.67	650,057,000	50,073,000	16.89	845,938,000
1909	21,720,000	32.36	702,945,000	49,379,000	17.49	863,754,000
1910	21,801,000			47,279,000		
1910, census, April 15	*20,625,432*	35.29	727,802,000	*41,178,434*	19.07	785,261,000
1911[1]	20,823,000	39.97	832,209,000	39,679,000	20.54	815,184,000
1912	20,699,000	39.39	815,414,000	37,260,000	21.20	790,064,000
1913	20,497,000	45.02	922,783,000	36,030,000	26.36	949.645.000
1914	20,737,000	53.94	1,118,487,000	35,855,000	31.13	1,116,333,000
1915	21,262,000	55.33	1,176,338,000	37,067,000	33.38	1,237,376,000
1916	22,108,000	53.92	1,191,955,000	39,812,000	33.53	1,334,928,000
1917	22,894,000	59.63	1,365,251,000	41,689,000	35.92	1,497,621,000
1918	23,284,000	70.59	1,643,639,000	43,546,000	40.88	780,052,000

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[1] Estimates of numbers revised, based on census data.

CATTLE—Continued.

Cattle: Number and Value on Farms Jan. 1, 1917 and 1918, by States.

State.	Milch cows.						Other cattle.					
	Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1—		Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1—	
	1918	1917	1918	1917	1918	1917	1918	1917	1918	1917	1918	1917
Maine	170	163	$75.00	$58.00	$12,750	$9,454	127	112	$37.60	$27.90	$ 4,775	$ 3,125
New Hampshire	102	98	85.00	66.50	8,670	6,517	71	63	40.00	31.60	2,840	1,991
Vermont	295	281	76.00	62.50	22,420	17,562	189	172	33.40	25.70	6,313	4,420
Massachusetts	154	160	90.00	75.00	13,860	12,000	97	88	37.30	29.60	3,618	2,605
Rhode Island	21	22	90.00	77.00	1,890	1,694	12	11	39.70	31.30	476	344
Connecticut	116	121	85.00	73.50	9,860	8,894	78	73	41.00	30.80	3,198	2,248
New York	1,524	1,539	85.00	66.00	129,540	101,574	1,005	939	38.30	31.00	38,492	29,109
New Jersey	152	155	90.00	76.00	13,680	11,780	74	74	41.60	34.00	3,078	2,516
Pennsylvania	960	980	75.00	62.50	72,000	61,250	717	664	36.80	30.80	26,386	20,451
Delaware	43	43	64.00	56.00	2,752	2,408	23	21	35.80	31.90	823	670
Maryland	181	183	69.50	58.00	12,580	10,614	134	125	38.90	32.20	5,213	4,025
Virginia	377	373	57.00	46.50	21,489	17,344	510	486	37.70	31.80	19,227	15,455
West Virginia	245	245	61.50	53.50	15,068	13,108	373	369	44.80	38.70	16,710	14,280
North Carolina	309	315	51.00	39.00	15,759	12,285	375	364	24.80	19.40	9,300	7,062
South Carolina	193	189	57.50	40.00	11,098	7,560	232	215	25.60	18.30	5,939	3,934
Georgia	435	418	51.80	37.00	22,533	15,466	755	686	22.20	16.20	16,761	11,113
Florida	145	141	53.00	43.00	7,685	6,063	891	865	22.20	16.50	19,780	14,272
Ohio	940	950	74.00	60.00	69,560	57,000	954	900	43.70	36.40	41,690	32,760
Indiana	713	706	70.00	58.50	49,910	41,301	757	735	45.00	39.00	34,065	28,665
Illinois	1,057	1,057	80.50	68.00	85,088	71,876	1,314	1,251	49.70	43.30	65,306	54,168
Michigan	874	865	74.00	61.50	64,676	53,198	752	730	35.90	30.20	26,997	22,046
Wisconsin	1,785	1,750	75.00	65.00	133,875	113,750	1,394	1,340	33.30	29.80	46,420	39,932
Minnesota	1,328	1,302	70.00	58.00	92,960	75,516	1,540	1,400	31.40	26.50	48,356	37,100
Iowa	1,405	1,405	76.70	66.50	107,764	93,432	2,919	2,754	47.90	43.20	139,820	118,973
Missouri	910	875	69.70	58.50	63,427	51,188	1,782	1,650	47.60	40.90	84,823	67,485
North Dakota	434	425	69.00	61.50	29,946	26,138	650	650	41.60	38.20	27,040	24,830
South Dakota	555	524	75.00	67.00	41,625	35,108	1,438	1,250	49.80	43.70	71,612	54,625
Nebraska	703	676	78.50	68.00	55,186	45,968	2,803	2,525	49.30	44.30	138,188	111,858
Kansas	945	900	75.40	64.50	71,253	58,050	2,354	2,200	49.30	43.10	116,052	94,820
Kentucky	435	418	61.00	49.50	26,535	20,691	581	570	39.00	33.70	22,659	19,209
Tennessee	373	366	55.00	43.00	20,515	15,738	554	528	30.10	25.50	16,675	13,464
Alabama	433	405	47.50	36.50	20,568	14,782	668	534	20.40	14.70	13,627	7,850
Mississippi	508	475	47.50	38.00	24,130	18,050	644	575	21.90	16.40	14,104	9,430
Louisiana	324	300	49.50	42.00	16,038	12,600	578	525	24.20	20.00	13,988	10,500
Texas	1,128	1,175	57.50	54.50	64,860	64,038	4,660	5,482	34.40	32.60	160,304	178,713
Oklahoma	562	535	67.70	60.00	38,047	32,100	1,404	1,300	43.90	38.90	61,636	50,570
Arkansas	425	405	56.00	44.00	23,800	17,820	638	560	24.90	19.20	15,886	10,752
Montana	179	160	83.50	79.00	14,946	12,640	980	1,000	56.10	53.10	54,978	53,100
Wyoming	64	60	88.00	81.50	5,632	4,890	891	825	59.10	52.70	52,658	43,478
Colorado	254	237	82.00	73.50	20,828	17,420	1,272	1,200	50.20	44.70	63,854	53,640
New Mexico	88	85	72.00	68.00	6,336	5,780	1,179	1,145	41.90	39.70	49,400	45,456
Arizona	87	81	85.00	85.00	7,395	6,885	1,037	864	40.50	37.30	41,998	32,227
Utah	96	91	73.50	61.00	7,056	5,551	457	408	43.90	34.90	20,062	14,239
Nevada	28	26	85.00	76.00	2,380	1,976	517	470	46.30	39.50	23,937	18,565
Idaho	139	135	73.00	63.50	10,147	8,572	488	465	44.70	38.60	21,814	17,949
Washington	266	263	70.00	59.50	18,620	15,648	294	280	36.00	30.40	10,584	8,512
Oregon	227	225	60.00	55.00	13,620	12,375	683	610	39.50	37.30	26,978	22,753
California	597	591	72.50	67.00	43,282	39,597	1,701	1,636	42.10	38.10	71,612	62,332
United States	23,284	22,894	70.59	59.63	1,643,639	1,365,251	43,546	41,689	40.88	35.92	1,780,052	1,497,621

SWINE.

Swine: Number and Value on Farms in the United States, 1867-1918.

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of numbers are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available. It should also be observed that the census of 1910, giving numbers as of April 15, is not strictly comparable with former censuses, which related to numbers June 1.

Jan. 1—	Number.	Price per head Jan. 1.	Farm value Jan. 1,
1867	24,694,000	$4.03	$99,637,000
1868	24,317,000	3.29	79,976,000
1869	23,316,000	4.65	108,431,000
1870	26,751,000	5.80	155,108,000
1870, census June 1	*25,134,569*	----------	--------------
1871	29,458,000	5.61	165,312,000
1872	31,796,000	4.01	127,453,000
1873	32,632,000	3.67	119,632,000
1874	30,861,000	3.98	122,695,000
1875	28,062,000	4.80	134,581,000
1876	25,727,000	6.00	154,251,000
1877	28,077,000	5.66	158,873,000
1878	32,262,000	4.85	156,577,000
1879	34,766,000	3.18	110,508,000
1880	34,034,000	4.28	145,782,000
1880, census June 1	*47,681,700*	----------	--------------
1881	36,248,000	4.70	170,535,000
1882	44,122,000	5.97	263,543,000
1883	43,270,000	6.75	291,951,000
1884	44,201,000	5.57	246,301,000
1885	45,143,000	5.02	226,402,000
1886	46,092,000	4.26	196,570,000
1887	44,613,000	4.48	200,043,000
1888	44,347,000	4.98	220,811,000
1889	50,302,000	5.79	291,307,000
1890	51,603,000	4.72	243,418,000
1890, census June 1	*57,409,583*	----------	--------------
1891	50,625,000	4.15	210,194,000
1892	52,398,000	$4.60	$241,031,000
1893	46,095,000	6.41	295,426,000
1894	45,206,000	5.98	270,385,000
1895	44,166,000	4.97	219,501,000
1896	42,843,000	4.35	186,530,000
1897	40,600,000	4.10	166,273,000
1898	39,760,000	4.39	174,351,000
1899	38,652,000	4.40	170,110,000
1900	37,079,000	5.00	185,472,000
1900, census June 1	*62,868,041*	----------	--------------
1901[1]	56,982,000	6.20	353,012,000
1902	48,699,000	7.03	342,121,000
1903	46,923,000	7.78	364,974,000
1904	47,009,000	6.15	289,225,000
1905	47,321,000	5.99	283,255,000
1906	52,103,000	6.18	321,803,000
1907	54,794,000	7.62	417,791,000
1808	56,084,000	6.05	339,030,000
1909	54,147,000	6.55	354,794,000
1910			
1910, census April 15	47,782,000	----------	--------------
1911[1]	*58,185,676*	9.17	533,309,000
1912	65,620,000	9.37	615,170,000
1913	65,410,000	8.00	523,328,000
1914	61,178,000	9.86	603,109,000
1915	58,933,000	10.40	612,951,000
1916	64,618,000	9.87	637,479,000
1917	67,766,000	8.40	569,573,000
1918	67,503,000	11.75	792,898,000
	71,374,000	19.51	1,392,276,000

[1] Estimates of numbers revised, based on census data.

SWINE—Continued.

Swine: Number and Value on Farms Jan. 1, 1917 and 1918, by States.

State.	Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars). Jan. 1—	
	1918	1917	1918	1917	1918	1917
Maine	100	100	$23.00	$16.60	$2,300	$1,660
New Hampshire	56	53	25.00	15.60	1,400	827
Vermont	120	113	22.20	13.00	2,664	1,469
Massachusetts	113	112	23.00	15.00	2,599	1,680
Rhode Island	16	14	25.00	14.50	400	203
Connecticut	64	58	26.00	17.50	1,664	1,015
New York	842	759	23.60	14.70	19,871	11,157
New Jersey	174	163	26.20	17.00	4,559	2,771
Pennsylvania	1,291	1,174	22.30	13.90	28,789	16,319
Delaware	64	58	17.00	11.60	1,088	673
Maryland	388	359	16.00	11.50	6,208	4,128
Virginia	1,105	1,023	13.90	9.20	15,360	2,412
West Virginia	422	380	16.00	10.00	6,752	3,800
North Carolina	1,464	1,450	17.10	9.70	25,034	14,065
South Carolina	966	920	15.50	9.50	14,973	8,740
Georgia	2,766	2,585	14.50	9.00	40,107	23,265
Florida	1,375	1,100	10.60	6.50	14,575	7,150
Ohio	3,774	3,527	20.50	12.20	77,367	43,029
Indiana	4,168	3,970	20.20	11.50	84,194	45,655
Illinois	5,111	4,444	22.00	13.70	112,442	60,883
Michigan	1,372	1,345	19.80	12.40	27,166	16,678
Wisconsin	2,019	2,060	22.30	14.30	45,024	29,458
Minnesota	2,241	2,075	23.50	14.50	52,664	30,088
Iowa	10,307	9,370	24.20	14.70	249,429	137,739
Missouri	4,708	4,280	18.50	10.00	87,098	42,800
North Dakota	507	650	20.80	13.00	10,546	8,450
South Dakota	1,504	1,432	23.50	15.50	35,344	22,196
Nebraska	4,200	4,200	24.40	14.00	102,480	58,800
Kansas	2,560	2,535	21.00	12.30	53,760	31,180
Kentucky	1,716	1,589	14.50	8.90	24,882	14,142
Tennessee	1,634	1,485	15.00	8.40	24,510	12,474
Alabama	2,128	1,850	14.50	8.50	30,856	15,725
Mississippi	1,902	1,698	15.00	7.50	28,530	12,735
Louisiana	1,568	1,584	13.60	9.20	21,325	14,573
Texas	3,068	3,229	14.10	9.50	43,259	30,676
Oklahoma	1,219	1,325	17.00	10.20	20,723	13,515
Arkansas	1,643	1,550	13.50	8.20	22,180	12,710
Montana	215	269	20.50	12.00	4,408	3,228
Wyoming	54	60	20.50	11.20	1,107	672
Colorado	356	352	20.00	12.00	7,120	4,224
New Mexico	86	101	15.70	10.50	1,350	1,000
Arizona	64	80	18.00	13.00	1,152	1,040
Utah	102	101	20.00	10.50	2,040	1,060
Nevada	37	37	19.00	11.00	703	407
Idaho	219	292	19.00	10.40	4,161	3,037
Washington	283	283	20.00	11.10	5,600	3,141
Oregon	309	315	17.50	10.00	5,408	3,150
California	974	994	17.50	10.10	17,045	10,039
United States	71,374	67,503	19.51	11.75	1,392,276	792,898

SHEEP AND WOOL.

Sheep: Number and Value on Farms in the United States, 1867-1918.

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of numbers are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available. It should also be observed that the census of 1910, giving numbers as of April 15, is not strictly comparable with former censuses, which related to numbers June 1.

Year.	Number.	Price per head Jan. 1.	Farm value Jan. 1
1867	39,385,000	$2.50	$98,644,000
1868	38,992,000	1.82	71,053,000
1869	37,724,000	1.64	62,037,000
1870	40,853,000	1.96	79,876,000
1870, census, June 1	*28,477,951*	----------	----------
1871	31,851,000	2.14	68,310,000
1872	31,679,000	2.61	82,768,000
1873	32,002,000	2.71	89,427,000
1874	33,938,000	2.43	82,353,000
1875	33,784,000	2.55	86,278,000
1876	35,935,000	2.37	85,121,000
1877	35,804,000	2.13	76,362,000
1878	35,740,000	2.21	78,898,000
1879	38,124,000	2.07	78,965,000
1880	40,766,000	2.21	90,231,000
1880, census, June 1	*35,935,354*	----------	----------
1881	43,570,000	2.39	104,071,000
1882	45,016,000	2.37	106,596,000
1883	49,237,000	2.53	124,366,000
1884	50,627,000	2.37	119,903,000
1885	50,360,000	2.14	107,961,000
1886	48,322,000	1.91	92,444,000
1887	44,759,000	2.01	89,873,000
1888	43,545,000	2.05	89,280,000
1889	42,599,000	2.13	90,640,000
1890	44,336,000	2.27	100,660,000
1890, census, June 1	*35,935,364*	----------	----------
1891	43,431,000	2.50	108,397,000
1892	44,938,000	$2.58	$116,121,000
1893	47,274,000	2.66	125,909,000
1894	45,048,000	1.98	89,186,000
1895	42,294,000	1.58	66,686,000
1896	38,299,000	1.70	65,168,000
1897	36,819,000	1.82	67,021,000
1898	37,657,000	2.46	92,721,000
1899	39,114,000	2.75	107,698,000
1900	41,883,000	2.93	122,666,000
1900, census, June 1	*61,503,713*	----------	----------
1901[1]	59,757,000	2.98	178,072,000
1902	62,039,000	2.65	164,446,000
1903	63,965,000	2.63	168,316,000
1904	51,630,000	2.59	133,530,000
1905	45,170,000	2.82	127,332,000
1906	50,632,000	3.54	179,056,000
1907	53,240,000	3.84	204,210,000
1908	54,631,000	3.88	211,736,000
1909	56,084,000	3.43	192,632,000
1910	57,216,000	----------	----------
1910, census. April 15	*52,447,861*	4.12	216,030,000
1911[1]	53,633,000	3.91	209,535,000
1912	52,362,000	3.46	181,170,000
1913	51,482,000	3.94	202,779,000
1914	49,719,000	4.02	200,045,000
1915	49,956,000	4.50	224,687,000
1916	48,625,000	5.17	251,594,000
1917	47,616,000	7.13	339,529,000
1918	48,900,000	11.82	577,867,000

[1] Estimates of numbers revised, based on census data.

SHEEP AND WOOL—Continued.

Sheep: Number and Value on Farms Jan. 1, 1917 and 1918, by States.

State.	Number (thousands) Jan. 1— Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars).	
	1918	1917	1918	1917	1918	1917
Maine	163	157	$9.40	$6.30	$1,532	$989
New Hampshire	37	35	10.60	6.70	392	234
Vermont	106	100	11.60	7.30	1,230	730
Massachusetts	28	25	10.30	6.70	288	168
Rhode Island	6	5	9.50	7.20	57	36
Connecticut	20	18	11.40	7.60	228	137
New York	840	800	13.20	8.40	11,088	6,720
New Jersey	26	29	10.90	7.20	283	209
Pennsylvania	913	830	11.70	7.10	10,682	5,893
Delaware	10	8	9.00	5.90	90	47
Maryland	234	223	9.80	6.60	2,293	1,472
Virginia	686	686	10.50	6.50	7,203	4,459
West Virginia	751	715	11.20	6.60	8,411	4,719
North Carolina	137	140	6.60	3.90	904	546
South Carolina	31	30	4.60	3.20	143	96
Georgia	144	150	4.20	2.80	605	420
Florida	120	119	3.40	2.70	408	321
Ohio	3,091	2,944	11.60	7.20	35,856	21,197
Indiana	998	950	12.80	8.20	12,774	7,790
Illinois	988	898	12.90	8.20	12,745	7,364
Michigan	1,926	1,834	12.60	7.80	24,268	14,305
Wisconsin	651	645	11.90	7.50	7,747	4,838
Minnesota	568	541	11.80	7.60	6,702	4,112
Iowa	1,224	1,200	13.80	8.80	16,891	10,560
Missouri	1,466	1,370	12.90	7.70	18,911	10,549
North Dakota	252	240	11.80	7.40	2,074	1,776
South Dakota	750	625	11.60	7.40	8,700	4,625
Nebraska	408	381	11.00	7.50	4,488	2,858
Kansas	418	348	12.00	7.60	5,016	2,645
Kentucky	1,270	1,155	11.20	7.10	14,224	8,200
Tennessee	606	600	8.60	5.80	5,212	3,480
Alabama	131	121	4.50	3.20	590	387
Mississippi	174	193	4.50	3.00	783	579
Louisiana	209	240	4.10	2.90	857	696
Texas	2,188	2,328	7.50	4.40	16,410	10,243
Oklahoma	208	104	11.30	6.30	2,350	655
Arkansas	149	124	7.10	3.90	1,058	484
Montana	3,045	3,500	12.60	7.10	38,367	24,850
Wyoming	4,100	4,100	13.60	7.60	55,760	31,160
Colorado	2,086	1,950	12.60	7.50	26,284	14,625
New Mexico	3,135	3,300	10.00	5.80	31,350	19,140
Arizona	1,550	1,632	10.40	6.30	16,120	10,282
Utah	2,340	2,089	13.60	7.90	31,824	16,503
Nevada	1,630	1,455	13.90	8.20	22,657	11,931
Idaho	3,202	3,170	13.30	8.20	42,587	25,994
Washington	661	585	11.40	7.10	7,535	4,154
Oregon	2,448	2,400	12.10	8.10	29,621	19,440
California	2,776	2,524	11.30	6.70	31,369	16,911
United States	48,900	47,616	11.82	7.13	577,867	339,529

SHEEP AND WOOL—Continued.

Wool: Product by States, 1916 and 1917.

[Estimate of U. S. Department of Agriculture.]

State.	Fleeces (000 omitted).		Weight per fleece.		Wool production (000 omitted).		Price per pound.			
							1917		1916	
	1917	1916	1917	1916	1917	1916	Apr. 15	Oct. 15	Apr. 15	Oct. 15
	No.	*No.*	*Pounds*	*Pounds*	*Pounds*	*Ponuds*	*Cents*	*Cents*	*Cents*	*Cents*
Maine	126	131	6.6	6.5	833	850	42	66	33	37
New Hampshire	27	28	6.7	6.6	183	185	47	64	28	--------
Vermont	82	77	7.3	7.5	597	580	45	65	31	36
Massachusetts	18	18	6.5	7.0	119	125	--------	--------	--------	--------
Rhode Island	4	5	6.2	5.0	24	25	--------	--------	29	--------
Connecticut	14	14	5.5	5.5	75	75	--------	--------	--------	--------
New York	517	530	6.8	6.7	3,514	3,550	45	65	32	33
New Jersey	15	16	5.2	5.0	80	80	--------	--------	--------	--------
Pennsylvania	650	650	6.5	6.5	4,225	4,225	42	62	28	33
Delaware	5	5	5.8	5.8	31	30	28	--------	--------	--------
Maryland	126	129	6.0	5.8	758	750	40	65	29	36
West Virginia	539	530	5.0	5.0	2,695	2,750	37	68	30	35
Kentucky	619	625	4.8	5.0	2,969	3,125	37	59	31	33
Ohio	1,881	1,950	7.4	7.0	13,923	13,650	46	67	31	34
Michigan	1,107	1,134	7.4	7.3	8,192	8,275	47	65	31	34
Indiana	619	650	7.0	6.8	4,332	4,420	42	61	30	34
Illinois	488	514	7.9	7.5	3,855	3,855	37	58	27	32
Wisconsin	334	330	7.9	7.6	2,636	2,510	41	62	28	32
Minnesota	380	385	7.8	7.0	2,964	2,695	37	50	27	28
Iowa	633	641	7.7	7.6	4,875	4,875	39	56	28	30
Missouri	687	680	7.0	6.8	4,810	4,625	37	60	28	31
Total	8,871	9,042	6.95	6.77	61,690	61,255	42.1	62.4	29.7	33.0
Virginia	405	380	4.6	5.0	1,862	1,900	42	65	29	35
North Carolina	146	133	3.8	4.3	553	570	36	55	26	29
South Carolina	24	25	4.0	3.8	95	95	29	46	22	28
Georgia	157	165	2.9	3.0	455	495	28	49	25	27
Florida	127	111	2.8	3.1	355	345	--------	62	--------	27
Alabama	106	100	3.3	3.5	350	350	26	38	21	24
Mississippi	149	135	3.3	4.0	491	540	27	37	21	24
Louisiana	156	159	3.6	3.7	560	590	27	36	16	18
Arkansas	78	80	4.5	4.4	350	350	28	43	22	21
Tennessee	423	425	4.2	4.4	1,776	1,870	35	50	26	28
Total	1,771	1,713	3.87	4.15	6,847	7,105	34.4	51.9	25.0	28.2
Kansas	191	185	7.6	7.2	1,450	1,330	--------	--------	22	--------
Nebraska	256	229	7.5	8.0	1,922	1,830	43	--------	27	28
South Dakota	512	475	7.3	7.5	3,738	3,560	38	54	23	29
North Dakota	192	180	7.4	7.5	1,418	1,350	33	50	24	29
Montana	3,071	3,150	7.6	7.8	23,342	24,570	42	50	30	29
Wyoming	3,705	3,647	8.2	8.5	30,380	31,000	41	55	23	28
Idaho	1,974	2,055	7.6	7.3	15,000	15,000	41	60	27	28
Washington	594	594	8.4	8.0	4,988	4,750	38	56	24	27
Oregon	1,610	1,630	8.2	8.1	13,200	13,200	40	54	27	--------
California	1,740	1,812	7.0	6.4	12,180	11,600	38	53	22	20
Nevada	1,397	1,333	7.3	7.5	10,200	10,000	37	50	22	--------
Utah	2,053	2,083	7.6	7.2	15,600	15,000	36	47	26	24
Colorado	1,378	1,400	6.4	6.0	8,820	8,400	38	--------	26	26
Arizona	897	915	6.5	6.5	5,831	5,950	37	--------	25	--------
New Mexico	3,176	3,200	5.8	5.7	18,422	18,240	33	49	22	24
Texas	1,435	1,464	7.0	7.0	10,045	10,250	27	47	21	25
Oklahoma	77	75	6.5	6.7	500	500	36	44	22	25
Total	24,258	24,427	7.30	7.23	177,036	176,530	38.0	52.1	24.8	26.3
United States	34,900	35,182	7.04	6.96	245,573	244,890	39.0	54.0	26.0	28.3
Pulled wool	--------	--------	--------	--------	40,000	43,600	--------	--------	--------	--------
Total product	--------	--------	--------	--------	285,573	288,490	--------	--------	--------	--------

BUTTER AND EGGS.

Butter: Average Price Received by Farmers on First of Each Month, by States, 1917.

State and division.	Butter, cents per pound.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Maine	37	38	39	39	39	41	39	38	42	47	47	47
New Hampshire	40	37	40	39	44	44	44	43	44	48	48	49
Vermont	40	40	41	40	45	43	40	41	44	47	50	48
Massachusetts	42	39	41	41	47	46	46	47	46	48	49	49
Rhode Island	42	41	40	43	50	46	47	47	46	50	50	49
Connecticut	40	39	39	39	47	46	45	46	47	47	50	49
New York	39	39	41	41	42	42	40	40	43	47	47	48
New Jersey	41	41	44	44	46	46	44	44	46	47	49	49
Pennsylvania	38	39	39	38	40	40	38	38	42	44	47	48
Delaware	40	38	------	35	45	45	40	42	48	47	45	50
Maryland	34	35	37	33	36	34	33	34	36	37	40	42
Virginia	31	31	32	32	34	32	31	31	32	35	37	39
West Virginia	32	32	32	30	33	32	31	32	33	34	39	41
North Carolina	30	30	30	30	30	30	31	31	31	35	36	39
South Carolina	32	32	33	32	39	35	35	35	37	39	40	41
Georgia	31	29	30	29	33	33	33	31	33	35	38	40
Florida	41	39	41	42	45	44	40	42	41	43	47	45
Ohio	34	33	34	32	36	34	32	33	35	38	40	42
Indiana	32	31	31	31	33	32	32	31	33	37	39	40
Illinois	34	32	33	32	35	34	33	34	35	38	40	40
Michigan	36	35	35	35	37	36	33	34	38	40	42	44
Wisconsin	38	38	40	39	41	40	37	38	40	43	43	44
Minnesota	36	38	38	37	40	38	35	37	39	41	44	43
Iowa	35	35	36	35	38	37	34	35	37	40	43	44
Missouri	30	30	30	30	33	31	29	30	31	34	36	37
North Dakota	36	35	34	31	36	35	34	33	35	37	39	40
South Dakota	36	34	34	33	38	35	34	33	37	40	42	43
Nebraska	33	30	31	30	35	34	31	32	34	38	40	40
Kansas	32	31	31	31	34	33	31	32	34	37	39	40
Kentucky	26	27	28	27	29	27	27	27	28	31	32	33
Tennessee	26	25	26	26	27	26	26	25	27	30	31	33
Alabama	27	25	26	27	29	28	29	28	29	30	32	34
Mississippi	29	28	28	28	29	29	29	29	28	31	32	36
Louisiana	33	33	33	33	35	34	34	34	34	35	37	39
Texas	30	28	28	28	31	29	29	30	31	34	36	37
Oklahoma	30	30	29	30	32	29	30	31	31	33	37	39
Arkansas	30	28	28	28	30	29	28	27	28	30	34	35
Montana	40	38	38	37	43	43	36	36	41	42	45	45
Wyoming	40	39	38	38	42	42	38	40	43	46	51	50
Colorado	37	34	34	33	38	37	35	36	40	42	44	45
New Mexico	38	37	39	38	42	40	39	43	40	44	46	47
Arizona	41	42	45	39	43	45	46	42	------	45	48	49
Utah	35	35	35	36	38	37	36	36	42	41	45	45
Nevada	38	42	42	39	44	44	46	44	50	46	49	54
Idaho	37	36	37	38	40	38	36	38	43	46	46	49
Washington	39	39	39	40	41	39	39	40	44	48	49	50
Oregon	38	36	37	36	39	38	37	39	43	45	49	48
California	35	38	40	36	37	36	38	42	43	46	47	47
United States	34.0	33.5	34.1	33.5	36.1	35.0	33.5	34.0	36.1	38.9	40.9	41.9
North Atlantic	39.1	39.0	40.1	39.6	41.7	41.7	39.7	39.7	42.9	46.0	47.5	48.0
South Atlantic	31.6	31.3	32.0	31.0	33.8	32.6	32.1	32.1	33.3	36.2	38.2	40.2
N. Central E. Miss. R.	34.7	33.7	34.4	33.5	36.3	35.0	33.2	33.8	36.0	39.0	40.7	42.0
N. Central W. Miss. R.	33.6	33.2	33.5	32.8	36.3	34.8	32.4	33.3	35.3	38.2	40.6	41.1
South Central	28.4	27.4	27.7	27.7	29.8	28.3	28.3	28.3	29.1	31.7	33.6	35.3
Far Western	36.8	37.2	38.2	36.5	39.1	37.6	37.6	39.8	42.8	45.2	47.2	47.5

BUTTER AND EGGS—Continued.

Eggs: Average Price Received by Farmers on First of Each Month, by States, 1917.

State and division.	Eggs, cents per dozen.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Maine	46	43	43	31	34	37	35	38	46	50	51	56
New Hampshire	43	46	42	31	[illegible]	39	39	43	49	51	52	60
Vermont	45	42	44	29	33	36	36	37	44	46	48	49
Massachusetts	58	49	47	34	40	43	45	47	55	58	65	65
Rhode Island	56	49	47	33	41	42	41	42	48	58	61	60
Connecticut	52	51	45	30	36	42	39	45	54	56	62	70
New York	48	45	43	31	34	36	36	38	46	50	50	56
New Jersey	49	50	46	32	35	37	29	42	47	50	55	60
Pennsylvania	44	42	40	28	33	34	34	36	40	44	47	51
Delaware	43	35	----	30	32	37	32	38	38	45	50	55
Maryland	41	38	35	27	30	32	30	32	35	39	40	48
Virginia	37	35	33	24	29	30	30	29	32	38	40	41
West Virginia	41	37	36	24	31	31	32	33	33	38	42	44
North Carolina	32	31	29	21	25	27	28	26	29	35	38	40
South Carolina	34	31	29	22	25	28	29	27	30	35	41	44
Georgia	34	29	30	21	26	28	27	27	31	36	41	43
Florida	40	35	35	25	30	29	30	33	34	40	44	46
Ohio	40	38	36	26	31	33	30	33	36	39	41	46
Indiana	38	34	33	25	30	33	28	30	33	37	38	43
Illinois	38	36	35	26	31	31	28	30	32	37	38	42
Michigan	38	38	37	37	31	33	29	32	36	38	40	43
Wisconsin	36	37	36	26	30	31	28	31	33	37	37	40
Minnesota	35	35	34	26	29	31	28	29	32	35	36	38
Iowa	35	36	33	25	30	31	27	28	32	34	35	39
Missouri	34	34	31	25	30	30	26	26	29	34	34	39
North Dakota	37	37	36	27	27	29	27	26	29	32	35	39
South Dakota	36	34	32	24	29	29	27	28	31	34	36	37
Nebraska	33	32	31	24	29	30	25	26	29	33	34	37
Kansas	33	32	29	25	29	30	26	25	29	34	35	38
Kentucky	35	34	32	23	28	29	26	27	27	33	35	39
Tennessee	35	32	30	22	27	28	25	24	27	33	34	39
Alabama	32	28	27	21	25	25	25	24	27	31	35	37
Mississippi	33	30	29	21	27	26	25	24	26	31	34	37
Louisiana	33	29	28	23	27	27	25	26	28	31	37	41
Texas	32	28	26	21	27	25	24	23	25	32	37	40
Oklahoma	34	31	28	22	27	27	26	23	26	31	34	39
Arkansas	33	28	28	22	26	25	25	22	25	31	35	37
Montana	50	47	41	31	29	31	34	34	39	41	45	52
Wyoming	50	48	41	32	33	33	34	37	40	42	48	53
Colorado	44	39	32	25	32	32	31	33	38	42	42	46
New Mexico	43	37	35	28	31	32	33	37	38	38	41	48
Arizona	53	43	35	32	34	38	42	41	------	52	50	54
Utah	42	41	34	25	29	30	30	30	36	38	43	45
Nevada	43	44	42	30	31	36	39	41	48	41	55	58
Idaho	46	43	38	30	32	31	31	33	36	41	43	50
Washington	44	41	33	28	33	32	33	36	41	43	50	53
Oregon	40	37	31	27	31	30	29	33	34	39	45	50
California	41	38	31	27	30	32	32	34	40	45	50	53
United States	37.7	35.8	33.8	25.9	30.0	31.1	28.3	29.8	33.2	37.4	39.4	43.3
North Atlantic	47.4	44.6	42.5	30.1	34.4	36.3	36.2	38.6	44.9	48.7	51.0	55.6
South Atlantic	36.9	33.8	32.3	23.5	28.1	29.3	24.6	29.5	32.0	37.4	40.7	44.1
N. Central E. Miss. R.	38.2	36.6	35.3	27.5	30.7	32.2	28.7	31.2	34.0	37.7	39.0	43.1
N. Central W. Miss. R.	34.2	34.1	31.6	25.0	29.5	30.3	26.5	26.8	30.3	34.0	34.8	38.4
South Central	33.3	30.0	28.4	21.8	26.8	26.4	25.0	24.0	26.1	31.9	35.3	38.8
Far Western	42.8	39.5	32.8	27.4	30.9	31.7	31.9	34.0	38.7	42.9	47.4	51.2

CHICKENS.

Chickens: Average Price Received by Farmers on First of Each Month, by States, 1917.

State and division.	Chicken, cents per pound.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Maine	16.2	17.0	18.0	18.0	19.4	19.1	21.0	21.2	21.6	20.9	20.2	19.5
New Hampshire	19.5	20.0	19.0	20.4	20.0	20.8	21.0	21.0	21.4	21.0	21.5	22.5
Vermont	15.2	17.4	15.6	17.5	17.5	19.0	17.9	19.3	18.6	20.3	20.0	19.5
Massachusetts	21.0	21.0	23.0	24.0	25.0	23.0	24.4	26.0	24.6	26.0	24.0	22.2
Rhode Island	21.0	20.5	22.0	23.0	29.5	26.0	29.0	24.0	------	25.3	26.0	24.5
Connecticut	20.2	20.8	20.5	20.7	24.0	23.6	23.6	24.0	24.0	24.2	25.1	25.0
New York	17.2	18.8	19.0	19.3	20.3	21.0	21.1	22.0	22.7	21.9	22.7	23.0
New Jersey	19.6	21.0	21.4	21.3	22.2	23.0	23.0	24.0	25.0	25.6	25.1	24.7
Pennsylvania	15.9	16.4	17.9	18.8	20.2	20.0	19.9	20.7	21.2	21.0	22.3	21.0
Delaware	16.0	17.0	------	20.0	25.0	22.0	18.0	25.0	23.0	23.0	25.0	22.5
Maryland	17.3	18.4	18.8	19.5	22.2	22.0	24.0	21.2	21.8	24.7	22.1	21.5
Virginia	15.8	16.5	17.4	16.9	19.2	18.7	19.0	20.1	19.2	20.5	21.5	21.0
West Virginia	14.5	14.8	16.0	15.8	18.1	17.8	18.3	19.8	19.4	19.5	20.2	19.5
North Carolina	13.8	13.9	14.6	15.2	16.0	17.0	18.2	17.2	17.6	18.5	18.6	19.4
South Carolina	14.5	14.4	14.7	15.3	15.0	17.4	16.9	17.6	16.6	17.0	19.0	19.5
Georgia	14.0	14.1	15.0	15.5	17.3	17.1	17.7	17.2	18.0	18.0	20.5	20.0
Florida	18.5	19.3	19.4	19.6	20.4	20.2	19.3	21.0	19.8	22.0	22.5	23.0
Ohio	14.2	15.5	16.5	17.7	18.7	18.6	17.7	18.0	18.2	19.8	18.0	18.0
Indiana	14.1	15.0	16.2	16.8	18.5	18.1	17.5	17.0	17.5	18.5	17.6	16.5
Illinois	13.6	14.7	15.8	16.8	18.1	17.5	17.6	17.1	17.4	18.2	17.0	16.6
Michigan	13.6	14.8	15.9	15.9	18.1	18.1	18.1	17.0	17.8	18.2	17.4	16.5
Wisconsin	13.1	13.5	15.1	15.8	17.0	17.5	17.5	16.5	17.0	18.1	16.2	15.5
Minnesota	12.2	12.7	13.4	13.5	15.2	15.2	14.8	14.3	14.9	15.6	14.1	14.2
Iowa	13.9	14.2	14.9	15.2	16.2	16.2	15.5	15.7	15.9	17.0	15.9	15.6
Missouri	13.1	14.1	15.2	16.0	17.7	17.1	16.6	16.3	16.3	17.7	16.5	16.2
North Dakota	10.5	12.2	11.4	12.7	13.6	14.3	13.9	13.2	13.8	14.5	13.0	12.0
South Dakota	12.0	12.8	12.2	13.8	14.5	14.5	13.7	13.7	15.7	14.6	14.0	14.5
Nebraska	12.1	13.0	13.8	14.4	15.9	15.7	14.8	15.3	15.0	17.3	14.8	14.9
Kansas	12.1	13.9	14.1	14.9	16.1	16.2	15.5	14.7	14.9	16.6	15.7	15.5
Kentucky	13.1	14.3	15.5	16.4	17.8	17.3	17.0	17.5	16.5	17.8	17.2	16.8
Tennessee	12.8	13.9	15.1	16.7	17.7	17.8	18.1	15.8	16.0	16.6	16.8	16.6
Alabama	13.4	13.2	13.7	13.3	15.5	15.5	15.6	15.5	14.7	16.7	17.4	18.2
Mississippi	12.8	13.4	13.9	15.1	15.9	16.4	16.3	16.0	15.3	16.2	17.1	17.5
Louisiana	17.0	16.1	15.7	16.8	17.7	18.9	19.8	19.0	19.0	19.3	20.6	20.0
Texas	12.4	12.2	12.8	13.2	15.1	15.2	15.0	14.0	14.2	14.9	15.5	15.7
Oklahoma	12.3	12.6	13.7	14.4	15.9	16.0	16.1	15.4	14.4	15.2	15.9	15.3
Arkansas	11.8	11.5	12.6	13.9	15.3	16.2	15.5	15.4	14.9	15.0	15.6	17.0
Montana	14.5	15.1	16.5	16.4	18.0	19.0	20.0	18.1	21.1	19.1	18.4	18.0
Wyoming	16.0	15.5	17.4	19.4	18.8	20.0	17.6	18.8	17.6	21.3	18.9	18.0
Colorado	13.4	13.9	14.4	14.9	17.5	18.6	17.8	16.8	17.8	17.8	18.2	17.2
New Mexico	13.1	15.2	15.4	15.6	15.4	15.7	17.1	19.5	18.0	23.0	20.4	19.0
Arizona	19.5	21.1	18.8	21.0	20.8	22.0	24.6	24.0	------	23.5	22.0	19.5
Utah	13.4	14.1	15.6	15.1	15.4	16.6	17.6	16.5	16.9	17.7	18.0	17.5
Nevada	20.0	22.5	21.4	23.2	22.0	26.0	24.0	22.0	21.0	22.0	24.2	24.0
Idaho	13.0	12.3	13.0	14.4	16.0	16.0	15.6	15.6	16.0	16.5	15.5	16.0
Washington	14.4	14.3	15.2	17.0	18.4	18.0	17.8	16.8	17.5	17.3	18.5	17.5
Oregon	13.5	13.5	15.0	15.8	17.6	16.3	16.0	16.1	15.8	17.0	17.8	17.0
California	16.8	18.3	17.5	18.7	19.1	17.9	18.6	18.9	19.4	19.3	20.0	22.2
United States	13.9	14.7	15.5	16.1	17.5	17.5	17.3	17.1	17.2	18.1	17.7	17.5
North Atlantic	17.3	18.2	19.0	19.6	20.9	20.9	21.1	21.9	22.3	22.1	22.7	22.1
South Atlantic	15.1	15.5	16.1	16.5	18.2	18.3	18.7	19.0	18.8	19.7	20.6	20.4
N. Central E. Miss. R.	13.8	14.8	16.0	16.8	18.2	18.0	17.7	17.2	17.6	18.6	17.3	16.8
N. Central W. Miss. R.	12.8	13.7	14.3	14.9	16.2	16.1	15.5	15.3	15.5	16.8	15.5	15.3
South Central	13.0	13.2	13.9	14.7	16.2	16.4	16.4	15.7	15.4	16.2	16.7	16.8
Far Western	15.2	16.0	16.2	17.2	18.2	17.7	18.0	17.8	18.2	18.6	19.0	19.4

Number of Persons Engaged in Agriculture in Various Countries.

Country.	Year.	Males.		Females.		Total persons engaged in agriculture.	
		Number.	Per cent of males in all occupations.	Number.	Per cent of females in all occupations.	Number.	Per cent of persons in all occupations.
United States	1910	10,582,039	35.2	1,806,584	22.4	12,388,623	32.5
Algeria	1881	636,078	74.8	91,602	53.7	727,680	71.3
Argentina	1895	318,149	28.0	67,174	13.4	385,323	23.6
Australia	1901	377,626	29.5	39,029	11.1	416,655	25.6
Austria-Hungary	1900	8,185,250	58.5	5,935,805	70.3	14,121,055	63.0
Belgium	1900	533,665	23.6	163,707	17.6	697,372	21.9
Bolivia	1900	----------	----------	----------	----------	564,009	43.5
British India	1901	63,026,365	67.3	27,867,210	66.5	90,893,575	67.1
British North Borneo	1901	----------	----------	----------	----------	32,892	64.2
Bulgaria	1905	895,206	73.3	837,406	94.9	1,732,612	82.4
Canada	1901	707,997	45.4	8,940	3.7	716,937	39.9
Ceylon	1901	745,074	65.0	318,551	65.4	1,063,625	65.1
Chile	1907	448,546	50.3	21,877	6.2	470,423	37.7
Cuba	1907	364,821	52.2	3,110	4.2	367,921	47.6
Cyprus	1901	33,611	62.8	2,757	20.8	36,368	54.5
Denmark	1911	386,016	45.7	110,169	28.5	496,185	40.3
Egypt	1907	2,258,005	67.2	57,144	33.3	2,315,149	65.6
Federated Malay States	1901	115,027	28.2	52,324	82.7	167,351	35.5
Finland	1900	321,538	51.4	102,008	39.6	423,546	48.0
Formosa	1905	763,456	70.6	263,664	82.4	1,027,120	73.3
France	1906	5,452,392	41.9	3,324,661	43.2	8,777,053	42.4
Germany	1907	5,146,723	27.7	4,585,749	48.3	9,732,472	34.6
Greece	1907	321,120	47.3	6,972	12.2	328,092	44.6
Grenada	1901	8,816	57.1	7,722	49.7	16,538	53.4
Italy	1901	6,370,277	57.9	3,196,063	60.5	9,566,340	58.8
Jamaica	1911	----------	----------	----------	----------	271,493	66.1
Malta and Gozo	1901	10,235	13.3	3,613	15.8	13,848	13.9
Mauritius	1901	72,493	57.1	5,989	38.0	78,482	55.0
Netherlands	1899	490,694	32.9	79,584	18.4	570,278	29.6
New Zealand	1911	103,644	28.5	7,472	8.3	111,116	24.5
Norway	1910	----------	----------	----------	----------	307,528	33.4
Philippine Islands	1903	1,163,777	57.8	90,286	8.8	1,254,063	41.3
Porto Rico	1899	196,893	73.3	1,868	3.9	198,761	62.8
Portugal	1900	1,127,268	65.3	380,293	52.0	1,507,561	61.4
Russia:							
In Europe	1897	13,808,505	59.6	1,974,164	38.0	15,782,669	55.6
In Asia	1897	2,092,965	69.2	105,137	30.5	2,198,102	65.3
Total	1897	15,901,470	60.7	2,079,301	37.5	17,980,771	56.7
St. Lucia	1901	----------	----------	----------	----------	15,796	54.1
Serbia	1900	311,700	65.5	13,524	50.5	325,224	64.7
Sierra Leone	1901	8,705	28.7	4,544	21.7	13,249	25.9
Spain	1900	3,741,730	58.1	775,270	51.8	4,517,000	56.9
Sweden	1900	761,016	52.4	333,264	53.8	1,094,280	52.8
Switzerland	1900	392,971	37.1	80,326	16.1	473,297	30.4
Trinidad and Tobago	1901	51,744	54.7	25,765	39.3	77,509	48.4
Union of South Africa	1904	863,223	56.3	847,057	77.5	1,710,280	65.1
United Kingdom	1901	2,109,812	16.3	152,642	2.9	2,262,454	12.4

Scene on the lawns at the 1917 Iowa State Fair.   Everybedy enjoyed the band music.

PART XII

Directory of Associations and Organizations Representing Agricultural Interests in Iowa.

CORN BELT MEAT PRODUCERS' ASSOCIATION—President, A. Sykes; Vice President, R. M. Gunn, Buckingham; Secretary, H. C. Wallace, Des Moines; Treasurer, Chas. Goodwin, Wall Lake.

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IOWA STATE HIGHWAY COMMISSION—Commissioners, H. C. Beard, Mt. Ayr; J. W. Holden, Scranton; S. W. Beyer, Ames; Chief Engineer, Thos. H. MacDonald, Ames.

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STATE HORTICULTURAL SOCIETY—President, S. A. Beach, Ames; Vice President, C. G. Blodgett, Mt. Pleasant; Secretary, Wesley Greene, Des Moines; Treasurer, F. O. Harrington, Williamsburg.

WESTERN GRAIN DEALERS' ASSOCIATION—President, S. W. Wilder, Cedar Rapids; Vice President, O. K. Morrison, South English; Secretary-Treasurer, George A. Wells, Des Moines.

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